



Riverbend Sand and Gravel Project



DRAFT ENVIRONMENTAL IMPACT REPORT

SCH# 2013071097

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Executive Summary

The County of Fresno (County) has prepared this Draft Environmental Impact Report (DEIR) in response to Riverbend Sand and Gravel, LLC's (Riverbend) submittal of the following applications:

- Surface Mining and Reclamation Plan (SMRP) in accordance with the Surface Mining and Reclamation Act (SMARA);
- Conditional Use Permit (CUP) in accordance with County Zoning Ordinance Section 858.

Implementation of the Proposed Riverbend Sand and Gravel Project (Project) requires discretionary approvals from State and local agencies; therefore the Project is subject to the environmental review requirements of the California Environmental Quality Act (CEQA). The County is the lead agency for the CEQA process.

Project Summary

The Project is located approximately 1.5 miles southwest of the City of Sanger between the Kings River and Riverbend Avenue. Figure ES-1 shows the Project location. The Project would consist of a multi-phased mining operation for construction grade aggregate (sand and gravel). A "wet mining" method is proposed which utilizes an electric dragline to excavate aggregate from beneath the water. The mined aggregate would be processed at an on-site processing plant with an anticipated annual process rate of 1.6 million tons, the amount necessary to produce 1.25 million tons of finished product. The processed material would be sent off-site for use in regional construction projects or used by an on-site Ready-Mix Concrete (RMC) plant and a Hot Mix Asphalt (HMA) plant. The Project's plant facilities would also include periodic use of a portable plant to recycle up to 125,000 tons per year (tpy) of concrete and asphalt debris generated on-site and from off-site regional construction projects. Operations would be conducted in nine phases, which will ramp-up over a five year period, and would be expected to be ongoing for at least 75 years. Figure ES-2 illustrates the mine plan, mining phases and reclamation schedule.

The Project encompasses 619 acres of an 833-acre parcel. The remaining 214 acres of the parcel, including the entire existing riparian habitat along the Kings River, are excluded from the Project. The Project site is currently occupied by orchards and vineyards with several farm residences nearby. Reclamation of the Project site would create approximately 268 acres of reclaimed farmland and approximately 351 acres of open space, namely riparian and open water wildlife habitat.

Project Purpose and Need

Project Purpose

In order to allow regional improvements such as housing, commercial development, industrial development, and infrastructure to be constructed as anticipated in the County's General Plan, the

region must have a consistent and predictable source of competitively priced building materials, including aggregate. The purpose of the Project is to provide a local source of aggregate that will augment the existing supply and contribute to projected future needs in Fresno County.

Project Need

An economic impact analysis is not required under CEQA. However, a review of the socio-economic issues related to the demand for aggregate is an important element to address the need for the Project (14 CCR Section 15131).

In California, the supply and demand for aggregate resources are tracked by the California State Department of Conservation's California Geological Survey (CGS). The CGS regularly analyzes the supply and demand of aggregate resources in California, and publishes reports indicating the past consumption and anticipated future demand for regional aggregate supplies. The various regions studied throughout the State are market areas referred to as "Production-Consumption Regions." The Project is in the Fresno Production-Consumption (P-C) Region, which services the needs of portions of central and eastern Fresno County and portions of southern Madera County. According to the California Department of Finance Report P-1 (January 2013), population in the region is expected to nearly double in the next 50 years from 1,083,705 in 2010 to 1,989,331 in 2060 (Appendix H).

The CGS report titled *Aggregate Availability in California – Map Sheet 52* (updated 2012) uses the Department of Finance future population estimates and historical per capita consumption to estimate future aggregate demand. Map Sheet 52 indicates that the P-C Region's projected 50-year aggregate demand as of January 1, 2011, was approximately 435 million tons (MMtons). Existing permitted reserves at that time was indicated to be 46 MMtons. However, that estimate did not include the 63 MMtons approved for the Sanger-Centerville Expansion (Vulcan Materials Company) in 2007 or the 50 MMtons approved for the Madera Quarry (Shimmick Construction) in Madera County in 2010. In 2012, the Carmelita Mine and Reclamation project (Colony Land Company) was approved for 85 MMtons. Those three projects added 198 MMtons (net finished aggregate product) of permitted reserves to the P-C Region. Without adjusting for reserves consumed since January 1, 2011 total permitted reserves in the P-C region would be 244 MMtons.

In 2010, Map Sheet 52 indicated that the P-C Region consumed approximately 6.0 MMtons per year (MMtpy). At that consumption rate for the four-year period from 2011 through 2014 approximately 24 MMtons of permitted reserves would have been consumed leaving 220 MMtons of permitted reserves at the beginning of 2015, or approximately 50% of the region's 50-year aggregate demand.

The Riverbend Project, if approved, would add 70 MMtons increasing the permitted aggregate reserves to 290 MMtons, or 67 % of the 50-year demand. If the proposed Austin Quarry project in Madera County is approved, it would add 250 MMtons. Total permitted reserves in the region would then be 540 MMtons.

Future consumption of permitted reserves is affected by the maximum annual sales permitted for each site and annual consumption rates as described in the following scenario.

Table ES-1 shows the existing permitted aggregate operations in the Fresno P-C Region, assuming Austin Quarry and Riverbend were both permitted. If Austin and Riverbend were both approved, annual permitted sales would be 10.4 MMtpy (Central Valley RM & River Rock annual sales are not included in the total since their permits expire in 2015 and 2016 respectively.)

Table ES-1. Maximum Annual Sales Permitted

Operation	Maximum Annual Sales Permitted (million tons)
Cent. Valley RM (Sante Fe) ¹	Negligible
River Rock (Vulcan) ²	Negligible
Rockfield (Cemex) ³	1.0
Kings River (CMI) ⁴	1.0
Sanger (Vulcan) ⁵	2.5
Madera Quarry ⁶	0.9
Carmelita ⁷	1.25
Austin Quarry ⁸	2.5
Riverbend ⁸	1.25
Total	10.4 ⁹

¹. Permit expires in 2015

². Permit expires in 2016

³. Permit expires in 2023

⁴. Permit expires in 2043

⁵. Reserves depleted in 2059

⁶. Reserves depleted in 50 years

⁷. Not yet operational

⁸. Proposed

⁹. CVRM & River Rock not included since their permits expire in 2015 and 2016 respectively.

Assuming that Carmelita, Riverbend and Austin Quarry are fully operational in 2015 and that annual sales would equal the permitted annual sales, aggregate consumption in the next 50 years would be as follows (not all mine projects are permitted so this assumption assumes a maximum reserve scenario):

- 2023 (in 8 years): Rockfield permit expires, 83 MMtons would be consumed, and annual permitted sales would drop to 9.4 MMtons.
- 2043 in (in 29 years): CMI permit expires, an additional 188 MMtons would be consumed and annual permitted sales would drop to 8.4 MMtons.
- 2060 (in 45 years): Sanger reserves would be depleted, an additional 143 MMtons would be consumed and annual permitted sales would drop to 5.9 MMtons.

- 2065 (in 50 years): Madera Quarry's reserves would be depleted, an additional 30 MMtons would be consumed and annual permitted sales would drop to 5.0 MMtons.

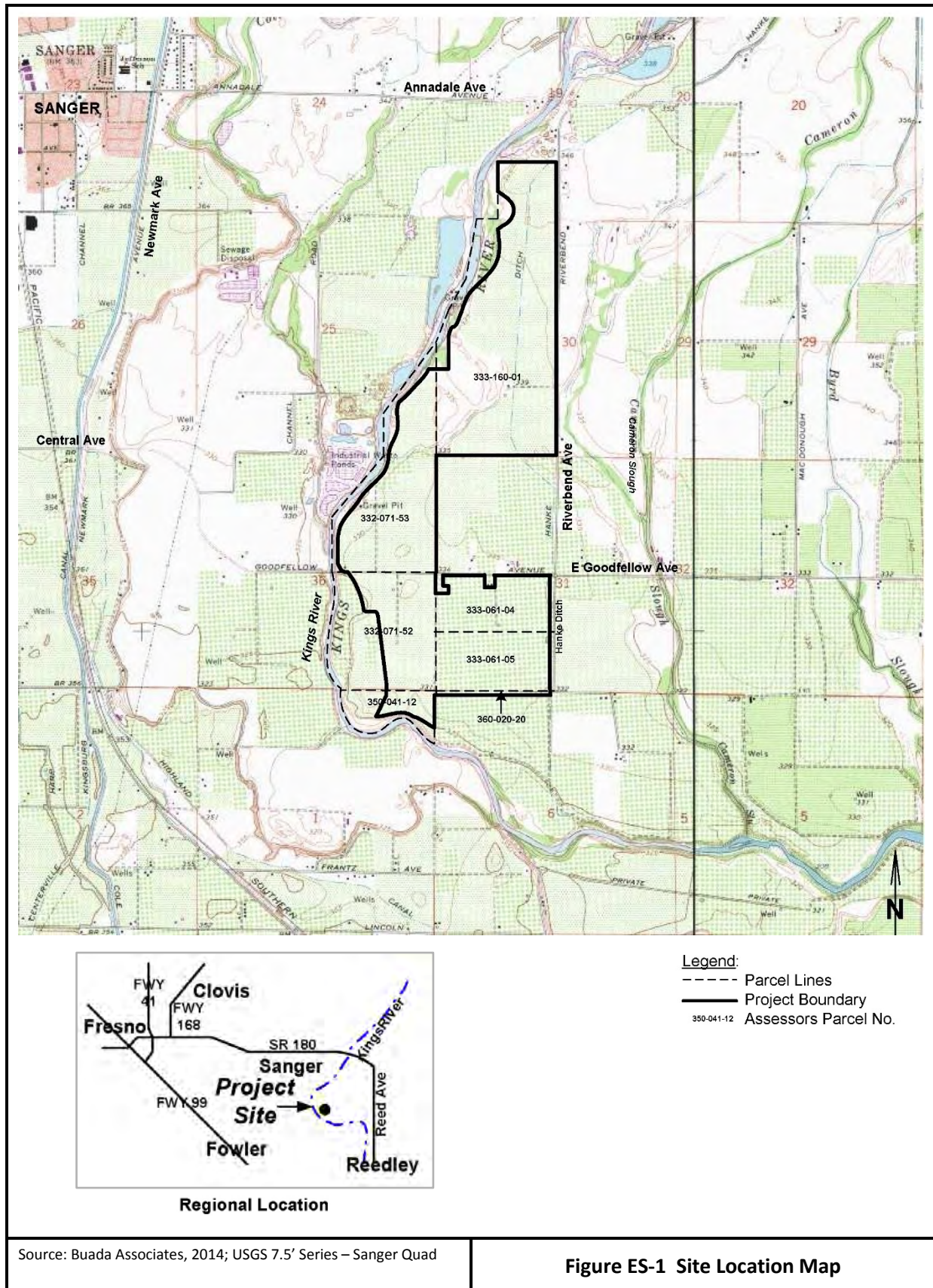
Total consumption for the next 50 years would be 444 MMtons or 9 MMtons more than the 435 MMtons projected in Map Sheet 52. The remaining permitted reserves would be 96 MMtons. However, at the annual consumption rate of 11 MMtpy in 50 years, as estimated by Map Sheet 52, there would be less than 9 years of reserves remaining.

It should be noted that the 50-year demand is simply a measuring tool and not a limit. In a healthy supply and demand market, having more than 50 years of permitted reserves would provide more sources for aggregate products and should result in more competitive pricing for the consuming public.

In order to meet the required specifications for the broad range aggregate products needed in the construction materials market, there needs to be a suitable balance of available rock and sand, roughly in the 50% rock/50% sand ratio. However, it appears that future market supply in the region may hit an imbalance with far more rock in supply than sand. This imbalance is primarily based on greater hard rock resources being developed and permitted than that of alluvial deposits which contain natural sand resources as well as rock. If the proposed Austin Quarry project in Madera County is approved, 300 MMtons (Madera Quarry 50 MMtons + Austin Quarry 250 MMtons), or 55% of the 546 MMtons of the region's reserves, would be from hard rock quarries, creating an imbalance in the rock to sand regional production. Technology allows for the production of sand from rock; however this process is more expensive than the washing and processing of natural sand. Manufactured sand is not the desired product by the local RMC producers or users. Producers of RMC have traditionally paid more and travelled great distances for natural concrete sand than manufactured sand because it flows better, is easier to pump and in some cases requires less cement than manufactured sand. With 55% of the local operations being rock reserves, natural occurring sand from the alluvial deposit on the Riverbend site on the Kings River will be critical to meet the sand demand for the region, including the demand of governmental agencies like Caltrans and the Fresno County Department of Public Works.

The California Department of Conservation (DOC) classifies areas of known important mineral commodities, referred to as Mineral Resource Zones (MRZ), so that these areas may be given land use consideration by local agencies in their general plan preparation process. DOC classified most of the Kings River Resource Area as MRZ-2 (including the Riverbend Project site), indicating that significant mineral deposits (i.e., sand and gravel) of regional or statewide significance are present, or there is a high likelihood for their presence.

In 1988, the State published SMARA Designation Report No. 8 (DR-8), which designated the Kings River Resource Area, including the Project site, as having construction grade aggregate deposits that are of regional significance (*Designation of Regionally Significant Construction Aggregate Resources in the Fresno Production Consumption Region, SMARA Designation Report #8*, DOC and DMG, July 1988).



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Phase	Acres ² (Approx)	Commence Excavation	Reclamation Type ³	Complete Reclamation
1A	23	2015	Farmland	2028
1B	18	2019	Farmland	2032
2A	27	2025	Farmland ⁴	2043/2090
2B	27	2022	Riparian & Open Water Habitat	2026
3A	67	2028	Farmland	2054
3B	68	2034	Farmland	2090
4A	38	2040	Riparian & Open Water Habitat	2050
4B	29	2045	Riparian & Open Water Habitat	2053
5	37	2050	Riparian & Open Water Habitat	2090
6A	31	2054	Farmland	2069
6B	31	2058	Farmland	2083
7	80	2062	Riparian & Open Water Habitat	2072
8A	44	2068	Riparian & Open Water Habitat	2077
8B	44	2075	Riparian & Open Water Habitat	2083
9	52	2081	Riparian & Open Water Habitat	2090
Total	619			

¹ Dates are estimates only. Actual excavation and reclamation dates will vary with permit approval date, market demand and actual depth and volume of marketable material.

² Gross acres, includes farm roads.

³ Actual final reclamation of each phase will depend on the volume and availability of overburden and process fines occurring on site.

⁴ To be used for portable plant during mining of plant site (Phase 9)

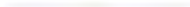
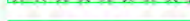
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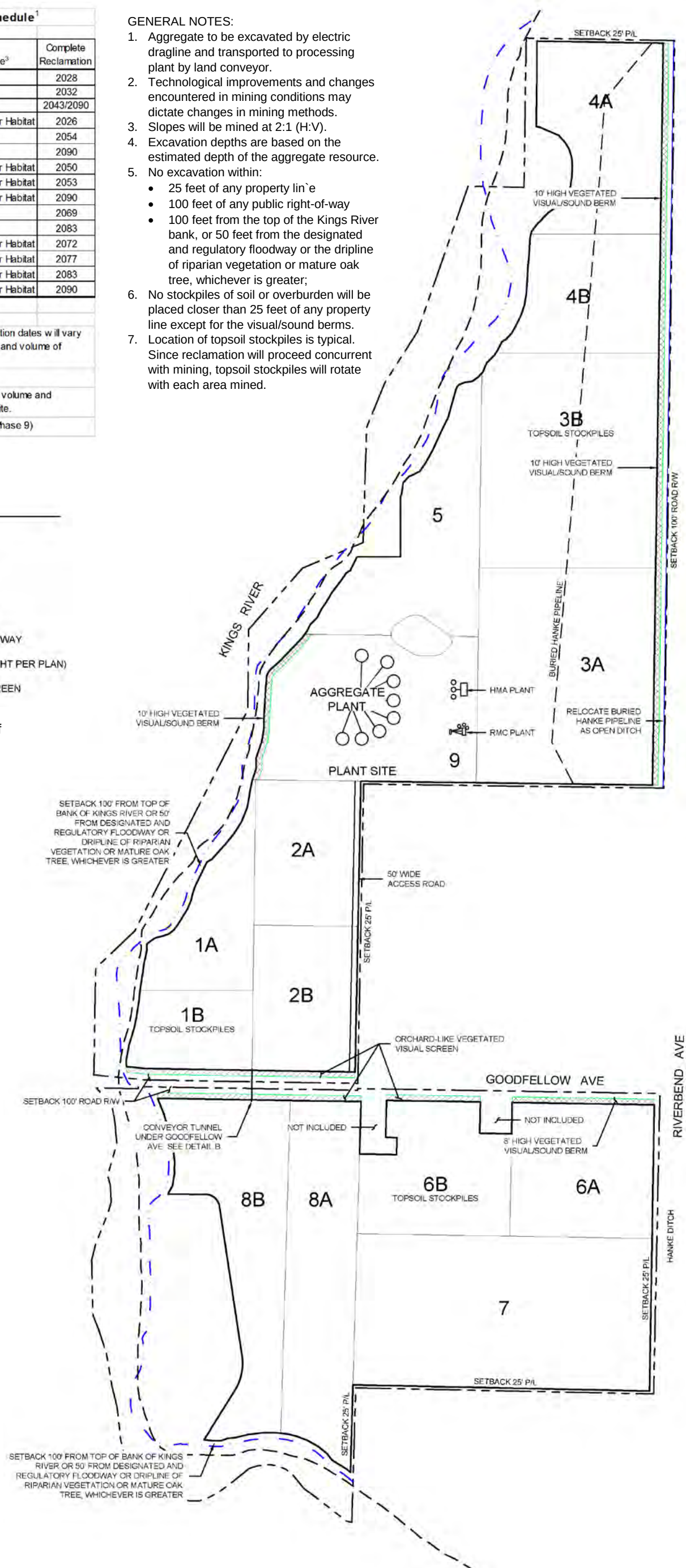
LEGEND

	PROPERTY BOUNDARY
	PROJECT BOUNDARY
	PHASE BOUNDARY
	DESIGNATED FLOODWAY
	FEMA REGULATORY FLOODWAY
	VISUAL/SOUND BERM (HEIGHT PER PLAN)
	ORCHARD-LIKE VISUAL SCREEN

See Figure 2-9 for typical cross-sections of excavation setbacks and berms.

GENERAL NOTES:

1. Aggregate to be excavated by electric dragline and transported to processing plant by land conveyor.
2. Technological improvements and changes encountered in mining conditions may dictate changes in mining methods.
3. Slopes will be mined at 2:1 (H:V).
4. Excavation depths are based on the estimated depth of the aggregate resource.
5. No excavation within:
 - 25 feet of any property line
 - 100 feet of any public right-of-way
 - 100 feet from the top of the Kings River bank, or 50 feet from the designated and regulatory floodway or the dripline of riparian vegetation or mature oak tree, whichever is greater;
6. No stockpiles of soil or overburden will be placed closer than 25 feet of any property line except for the visual/sound berms.
7. Location of topsoil stockpiles is typical. Since reclamation will proceed concurrent with mining, topsoil stockpiles will rotate with each area mined.



Source: Buada Associates, 2014

Figure ES-2 Mine Plan

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Distance matters since transportation plays a major role in the cost of aggregate to the consumer. Aggregate is a low-unit-value, high-bulk-weight commodity, and it must be obtained from nearby sources to minimize both the dollar cost to the aggregate consumer and other environmental and economic costs associated with transportation. If nearby sources do not exist, then transportation costs will significantly increase the cost of the aggregate by the time it reaches the consumer. Transporting aggregate from distant sources also results in increased fuel consumption, air pollution, traffic congestion, and road maintenance. Moreover, transportation cost is the principal constraint defining the market area for an aggregate mining operation.

Project Objectives

A clear statement of the Project objectives allows for the analysis of reasonable alternatives to the Project. The following are the objectives for the Project:

1. Provide a reliable and sustainable local source of high quality aggregate to help meet the current and long-term demand (75 years) for construction materials in Fresno County.
2. Create an additional, long-term supply of local aggregate reserves.
3. Utilize aggregate reserves from property already designated by the State and County as MRZ-2 (Mineral Resource Zone containing mineral resources of regional significance, i.e. sand and gravel).
4. Utilize high quality aggregate resources that meet the California Department of Transportation's stringent specifications for use in Portland cement concrete (PCC) and asphalt concrete (AC).
5. Provide an additional local source of construction aggregate with enough annual sales capacity (1.25 million tons) to encourage a healthy, competitive market.
6. Obtain aggregate resources with access to an efficient local road network and State Highway system.
7. Create a project that would not require dewatering of groundwater.
8. Create an environmentally sound project that would balance the recovery of the aggregate resource with the protection of other resources including wildlife habitat, groundwater, surface water, and air quality.
9. Create a project that would return a significant amount of mined land back to farming.
10. Create local quality jobs, while also benefiting local downstream businesses and creating enhanced tax revenue to the County.

Purpose and Use of Environmental Impact Report

This DEIR is intended to serve as an informational document for public agency decision-makers and the public in compliance with CEQA. Environmental impacts are analyzed to the degree of specificity prescribed by Section 15146 of the State CEQA Guidelines. This document addresses the potentially

significant adverse environmental impacts that may be associated with the Project, and identifies appropriate and feasible mitigation measures and alternatives in accordance with CEQA.

This document conforms to the following:

- California Environmental Quality Act (Public Resources Code Section 21000 et seq.);
- State CEQA Guidelines (California Code of Regulations Section 15000 et seq.); and
- County of Fresno, Regulations and Procedures for the Implementation of the California Environmental Quality Act, October 23, 2007.

CEQA Process

CEQA is a California statute passed in 1970 to institute a statewide policy of environmental protection. CEQA does not directly regulate land uses, but instead requires State and local agencies within California to follow a protocol of analysis and public disclosure of environmental impacts of proposed projects and adopt all feasible measures to mitigate those impacts.

The CEQA Guidelines were developed to explain and interpret the law for both the public agencies required to administer CEQA and for the public generally. The CEQA Guidelines provide objectives, criteria and procedures for the orderly evaluation of projects and the preparation of environmental documents. The fundamental purpose of the Guidelines is to make the CEQA process comprehensible to those who administer it, to those subject to it, and to those for whose benefit it exists. To that end, the Guidelines are more than mere regulations which implement CEQA, as they incorporate and interpret both the statutory mandates of CEQA and the principles advanced by judicial decisions.

In general, the CEQA process for an EIR involves the following steps:

- Lead Agency preparation of an Initial Study and/or determination for the need of an EIR;
- Notice of Preparation;
- Scoping process;
- Preparation of a DEIR;
- Notice of Completion, and DEIR public and agency review process;
- Response to comments;
- Preparation of final EIR; and
- Notice of Determination.

The involvement of the public during the CEQA process is an integral part of the environmental analysis. Public involvement helps to refine the proposed action, identify issues, explore possible alternatives and

identify interested and affected persons. The sections below describe the activities taken to ensure that the public has been, and will be appropriately involved in this process.

Initial Study, Notice of Preparation and Scoping Process

In accordance with CEQA Guidelines Section 15063, an Initial Study (IS) should be conducted to determine if a proposed project may have a significant effect on the environment. If the CEQA Lead Agency can determine that an EIR will clearly be required for a proposed project, an Initial Study is not required. The County, acting in its capacity as Lead Agency, determined an EIR would be required for this Project; therefore an Initial Study was not prepared.

After deciding that an EIR is required for a project, the Lead Agency shall send to the Office of Planning and Research (OPR) and each responsible and trustee agency a Notice of Preparation (NOP) stating that an EIR will be prepared.

The public scoping process provides a mechanism for focusing and clarifying the issues to be addressed in the DEIR, by actively obtaining input from the public and interested Federal, State, Tribal, and local agencies. Information received during the scoping assists the Lead Agency in identifying potential environmental issues, impacts, project alternatives, and mitigation measures associated with the Project.

The scoping period for this Project was initiated on August 1, 2013, with the publication of the NOP, and formally ended on September 16, 2013. The County held a public meeting on August 29, 2013, at the Sanger City High School. A Scoping Report was prepared which summarizes the comments received and includes copies of the comment letters. The NOP and Scoping Report is provided in Appendix A of this DEIR.

Notice of Completion and DEIR Review Process

The Notice of Completion was filed on July 17, 2014 and distributed to public agencies, other affected agencies, adjacent cities, and counties, members of the public, and any parties who have submitted a written request for a copy of the DEIR. It was also posted in the Sanger Herald Newspaper on July 17, 2014. The 45-day public review period for the DEIR started on July 17, 2014 and a copy of the DEIR is available for public review at the following locations:

Fresno County Public Library
2420 Mariposa Street
Fresno, CA 93721

Sanger Branch Library
1821 Seventh Street
Sanger, CA 93657

Fresno County Department of Public Works and Planning Website:
<http://www.co.fresno.ca.us/departmentspage.aspx?id=6030>

Written comments on the DEIR must be submitted to the County contact no later than September 2, 2014.

Response to Comments, Final EIR, Certification, Findings and Notice of Determination

Following the close of the public review period, written comments on a project will be compiled and responses will be generated in conjunction with the preparation of the Final EIR. The Final EIR will consist of a list of all persons, organizations, and public agencies commenting on the DEIR; copies of the comments received on the DEIR; responses to comments; and any other pertinent information added by the Lead Agency. Prior to approving a project, the County shall certify that the Final EIR has been completed in compliance with CEQA and that it reflects the agency's independent judgment and analysis.

The County shall file a Notice of Determination (NOD), and the Final EIR will serve as the CEQA compliance document for the decision-making agency (in this case the County) and any other agencies that may be responsible for review of the Project and issuance of required permits.

Mitigation Monitoring and Reporting

CEQA requires adoption of a reporting and monitoring program referred to as the Mitigation Monitoring and Reporting Program (MMRP) for those measures or conditions placed on a project to mitigate or avoid adverse effects on the environment. A final MMRP shall be adopted for this Project by the County upon certification of the Final EIR.

Issues Raised and Areas of Known Controversy

Written comments raised in response to the NOP and during the public scoping meeting are related to the topics listed below. The Scoping Report (Appendix A) provides a detailed listing of public comments.

- Aesthetics;
- Air Quality;
- Biological Resources;
- Cultural Resources;
- Hazards and Hazardous Materials;
- Land Use;
- Noise;
- Traffic and Transportation; and
- Water Resources.

Based on comments received during the NOP review period and scoping process the following represent the primary areas of controversy for this Project:

- Aesthetics – Depending on the given location of a viewer, portions of the Project site may be visible, including operational mining equipment. Section 3.1 discusses the significance of potential impacts related to this environmental issue.
- Agricultural Resources – Project implementation would reclaim 268 acres of Important Farmland but ultimately result in the permanent conversion of 351 acres of this resource. Section 3.2 discusses the significance of potential impacts related to Farmland conversion.
- Air Quality and Greenhouse Gas Emissions – Project operations, including excavation activities, plant operations, and vehicle trips, have the potential to impact air quality. Potential impacts associated with Greenhouse Gas (GHG) emissions are also a concern. In addition, the Project has the potential to generate odors. Sections 3.3 and 3.7 discuss the significance of potential impacts related to these environmental issues.
- Biological Resources – The Project is located adjacent to the Kings River and associated riparian habitat. The mining operations potentially could impact sensitive species and/or their habitat. Section 3.4 discusses the significance of potential impacts related to this environmental issue.
- Cultural Resources – Although a Cultural Resources Study and Sacred Lands File Search by the Native American Heritage Commission did not identify any significant cultural resources on the Project site, a pre-historic site was identified adjacent to the Project site. The potential for previously unknown resources to be uncovered during operations does exist. Section 3.5 discusses the significance of potential impacts related to this environmental issue.
- Hydrology and Water Quality – The potential for groundwater and surface water quality to be affected by mining is a potentially significant impact. The location of the Project in the relation to flood hazard areas is also a concern. Section 3.9 discusses the significance of potential impacts related to this environmental issue.
- Noise – Project implementation would result in increased on-site noise level from the equipment, and increased noise along vicinity roadways from increased truck traffic. Section 3.11 discusses the significance of potential impacts related to this environmental issue.
- Transportation and Traffic – Traffic would increase on surrounding roadways as a result of Project implementation. Section 3.12 discusses the significance of potential impacts related to this environmental issue.

Potential Impacts and Mitigation Measures

Potentially significant impacts were evaluated in this DEIR. The environmental issues identified below were determined not to be significantly affected by the implementation of the Project and do not require further analysis in this DEIR.

- Mineral Resources;
- Population and Housing;

- Public Services;
- Recreation; and
- Utilities and Service Systems.

The following topical environmental issues are described and evaluated in this DEIR. The DEIR section number of each is identified in parentheses.

- Aesthetics (3.1)
- Agriculture and Forestry Resources (3.2)
- Air Quality (3.3)
- Biological Resources (3.4)
- Cultural Resources (3.5)
- Geology and Soils (3.6)
- Greenhouse Gas Emissions/Climate Change (3.7)
- Hazards and Hazardous Materials (3.8)
- Hydrology and Water Quality (3.9)
- Land Use and Planning (3.10)
- Noise (3.11)
- Transportation and Traffic (3.12)

Table ES-2 provides a summary of the potentially significant impacts, applicable mitigation measures, and the level of significance after mitigation.

Significant and Unavoidable Impacts

An EIR must disclose the significant unavoidable impacts that will result from a proposed project. It is considered that the following environmental effects may have significant and unavoidable impacts:

Air Quality CEQA Guidelines Thresholds:

- b) *The Project would violate an air quality standard or contribute substantially to an existing or projected air quality violation. (Impact AQ-3)*
- c) *The Project would cause a cumulatively considerable net increase of a criteria pollutant for which the Project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). (Impact AQ-2)*

Noise and Vibration CEQA Guidelines Thresholds:

- c) *The Project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Project. (Impact NO-2).*

Transportation and Traffic CEQA Guidelines Thresholds:

- a) *The Project would conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. (Impact TRANS-1)*

- b) *The Project would conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. (Impact TRANS-2)*

Fresno County Guidelines for the Preparation of Traffic Impact Studies

The Project would generate traffic such that the Traffic Index (TI) would increase by a factor of 0.5. (Impact TRANS-7)

Cumulative Impacts

This DEIR evaluated the potential for cumulative impacts within each of the potentially significant topical environmental issues (Sections 3.1 through 3.12 and Section 5.1.5). The County identified seven currently or reasonably foreseeable projects that could result in cumulative impacts for the resource areas affected by the Project. These related projects include: Carmelita Mine and Reclamation Project; Sanger-Centerville Aggregate Operations Expansion (Vulcan Materials); Kings River Sand and Gravel (CMI); Santa Fe Aggregate (Central Valley Ready-Mix); Sanger Crossing Apartments; Pitman Farms; and the Family Dollar Store. The following is a brief description of the cumulative impacts that are considered cumulatively considerable:

Air Quality

Short term concentrations of NO_x, SO_x, PM₁₀ and PM_{2.5} each exceed the applicable threshold when added to background or compared to applicable thresholds. Thus, the Project impact on short term concentrations of these pollutants is cumulatively considerable.

Long term concentrations of PM₁₀ and PM_{2.5} each exceed the applicable threshold when added to background or compared to applicable thresholds. Thus, the Project impact on long term concentrations of these pollutants is cumulatively considerable.

Noise

Project traffic, when considered in conjunction with other cumulative projects, would cause noise levels along roadways to exceed the applicable thresholds, resulting in a significant noise impact. The Project would also have a cumulatively considerable noise impact due to the permanent increase in noise at roadside receivers.

The Project, when considered in conjunction with other cumulative projects, would cause a substantial temporary or periodic increase in noise levels exceeding the threshold in certain areas. Thus, the Project would also have a cumulatively considerable noise impact at these receivers.

Traffic

The Project, when considered in conjunction with other cumulative projects, would conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. The Project will contribute its fair share cost for the purposes of improving the traffic impacts. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the Project potential cumulative impacts remain significant and unavoidable.

The Project, when considered in conjunction with other cumulative projects, would conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. The Project will contribute its fair share cost for the purposes of improving the traffic impacts. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the Project potential cumulative impacts remain significant and unavoidable.

The Project, when considered in conjunction with other cumulative projects, would generate truck traffic that would result in the TI increasing by a factor of 0.5. The Project will contribute its fair share cost for the purposes of improving the structural section of the impacted street segments. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the Project potential cumulative impacts remain significant and unavoidable.

Summary of Project Alternatives

The CEQA Guidelines require a DEIR to describe a range of alternatives to the proposed project which would feasibly achieve most of the basic project objectives, but would avoid or substantially lessen any of the significant effects identified in the analysis. A DEIR is not required to consider every conceivable alternative to a proposed project. Rather, a DEIR must consider a reasonable range of alternatives that are potentially feasible; a DEIR is not required to consider infeasible alternatives.

Alternatives must be considered even if they would impede, to some degree, the attainment of project objectives or be more costly. The determination of feasibility of project alternatives may include, but not be limited to, factors such as site suitability, economic viability, infrastructure, plan consistency, regulatory and jurisdictional limitations, and control of an alternative site, if applicable.

The following six alternatives have been evaluated for this Project:

No Project Alternative

Under this alternative, no mining would occur and agricultural activities would continue on the proposed 619-acre Project site.

Reduced Annual Production Alternative

This alternative was considered to determine if limiting production would avoid or lessen any potentially significant impacts. Under this alternative, annual sales would be limited to 1.0 million tons as compared to the requested 1.25 million tons. The Reduced Annual Production Alternative would reduce annual production by 20%, thereby extending the life of the mining operation by 20% from 75 years to 90 years in order to recover all the resources.

Reduced Project Size Alternative

This alternative is considered in order to reduce potential impacts to the biological resources along the Kings River and to create a larger buffer between the proposed mining operations and homes to the east across Riverbend Avenue. This alternative would include the following:

- The proposed 50-foot setback from the existing riparian habitat would be increased by 100-feet to a 150-foot setback along the Kings River. The additional habitat buffer area would amount to about 25 acres.
- The 100-foot setback from Riverbend Avenue would be increased by 100 feet to a 200-foot setback. The additional setback from the road would amount to approximately 15 acres.
- This alternative would reduce the available aggregate reserves by approximately 5 million tons (7.1 percent) and the lifespan of the Project by about 5 years.

Reduced Mining Depth Alternative

This alternative was considered to determine if reducing the mining depth would avoid or lessen any potentially significant impacts. Under the Reduced Mining Depth Alternative, the Project acreage would remain the same but the maximum depth of mining would be 50 feet below ground surface (bgs) as opposed to 100 feet bgs, as proposed in the Project.

Under this alternative, the following changes to the Project would occur:

- The Project footprint would remain the same. However, since an average 20 feet of topsoil and overburden overlays the aggregate resource, reducing the mining depth to 50 feet from the proposed 100-feet would only provide 30 feet of aggregate material instead of 80 feet. Therefore, available aggregate reserves would be reduced by potentially 42 million tons, from 70 MMtons to 28 MMtons, or by up to 60 percent.
- The duration of mining and processing activities would be reduced from approximately 75 years to approximately 30 years, as less material would be available for mining.
- Since there would be less mining depth to fill, the mined land reclaimed to farmland would be increased by about 104 acres (Phases 2B, 5 and 7A) or an increase of about 39%.

- The surface area of reclaimed open water habitat would be reduced by about 93 acres, thereby reducing annual surface water evaporation by approximately 30%.
- The reduced depth may make it cost-prohibitive to mine with an electric dragline and require mining with a diesel excavator. Use of an excavator would require dewatering, which could create impacts to groundwater levels in the surrounding area.
- Annual groundwater use for processing would remain the same but long-term use would be reduced by 45 years.

Different Phasing Alternative

This alternative was considered to determine if modifying the phasing of the mining operations would avoid or lessen any potentially significant impacts. Under this Alternative, the Project footprint, depth of mining and duration of the Project would remain the same. However, mining would be initiated in the phases south of Goodfellow Avenue instead of north of Goodfellow Avenue, as proposed in the Project.

Alternatives Eliminated From Further Consideration

The following alternatives have been eliminated from further consideration:

- Alternative Location;
- Alternative Mining Method;
- Alternative Reclamation or End Use; and
- Reduced Project Duration.

Environmentally Superior Alternative

The Environmentally Superior Alternative is the Reduced Depth Alternative because all of the other alternatives identified greater impacts when compared to the proposed Project.

Impact Summary

Table ES-2. Impacts and Mitigation Measures Summary

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
AESTHETICS			
Impact AES-1: Would the Project substantially degrade the existing visual character or quality of the site and its surroundings?	Potentially significant	Mitigation Required: MM-AES-1: A 10-foot high vegetated berm shall be constructed along Riverbend Avenue adjacent to Phases 3A, 3B, 4A and 4B. An 8-foot vegetated berm shall be constructed along the south side of Goodfellow from Riverbend Avenue to 2,000 feet west of Riverbend Avenue. The berms will be planted with evergreen trees that will grow at least 15' high in two (2) staggered rows with one row on top of the berm. The berms shall be constructed and planted prior to the removal of overburden in each phase. MM-AES-2: Orchard-like screens shall be planted on the north side of Goodfellow Avenue west of the entrance road and on the south side of Goodfellow Avenue west of the 8-foot high vegetated berm prior to overburden removal in the adjacent phases. The tree species will be evergreen trees (e.g. olives) planted at a minimum of four (4) rows parallel to Goodfellow Avenue, with adjacent rows off-set such that there are no gaps to ensure dense screening.	Impacts would be less than significant after mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		MM-AES-3: The dragline shall be painted a neutral-tone color to achieve the best blending with the surrounding landscape and vegetation..	
Impact AES-2: Could the Project create a new source of light or glare, which would adversely affect day or nighttime views in the area?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
AGRICULTURE & FORESTRY RESOURCES			
Impact AG-1: Would the Project convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Farmland of Local Importance, or Grazing Land, as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	Potentially significant	Mitigation Required: MM AG-1: The Project shall conserve agricultural land by acquiring an agricultural conservation easement on 351 acres of Important Farmland as classified by DOC's FMMP to mitigate for the 351 acres of Important Farmland on the Project site to be converted to non-agricultural use.	Impacts would be less than significant after mitigation.
Impact AG-2: Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact AG-3: Would the Project involve other changes in the existing environment which, due to their location or nature, could result in substantial conversion of Farmland to non-agricultural use,	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
substantially impair the productivity of adjacent agricultural areas, or result in conversion of forest land to non-forest use?			
AIR QUALITY			
Impact AQ-1: Would the Project conflict with or obstruct implementation of an applicable air quality plan?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact AQ-2: Would the Project cause a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	Potentially significant	No feasible mitigation measures.	Significant and unavoidable.
Impact AQ-3: Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Potentially significant	No feasible mitigation measures.	Significant and unavoidable.
Impact AQ-4: Would the Project expose sensitive receptors to substantial pollutant concentrations?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact AQ-5: Would the Project	Potentially significant	Mitigation required:	Impacts would be less

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
create objectionable odors affecting a substantial number of people?		MM AQ-1: The following design features will mitigate VOC, SVOC, and/or SO ₂ emissions: 1. The type of asphaltic cement produced by on-site plants affects odorous emissions. Some cements have lower VOC/SVOC emissions than others. Therefore, cements with lower VOC/SVOC emissions will be used to the extent feasible. 2. Periodic burner tune-ups may reduce VOC emission by about 38 percent. Therefore, periodic burner tune-ups will be implemented. 3. Mixing drum vapors will be routed back to the dryer burner.	than significant after mitigation.
BIOLOGICAL RESOURCES			
Impact BIO-1: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact BIO-2: Would the Project have a substantial adverse effect on federally protected wetlands	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filing, hydrological interruption, or any other means?			
Impact BIO-3: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact BIO-4: Would the Project conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact BIO-5: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Potentially significant	Mitigation required: MM BIO-1: 1. All buildings to be removed shall be surveyed by a qualified biologist to determine if they are being used as a roost site for bats, and if so, what type of roosting behavior is occurring (night roost vs. day/maternity roost). The survey shall be conducted in June or July when maternity roosts would be most active.	Impacts would be less than significant after mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		2. Any buildings to be removed that are determined to support only night-roosting bats shall be removed between September 1 and October 14, or between February 16 and April 14. Removal of buildings during these periods will avoid impacts to any bats utilizing the buildings during the normal breeding season (April 15 to August 30) and winter torpor (October 15 to February 15). 3. If a building is determined to support a day/maternity roost, a mitigation plan (i.e., removal plan) shall be prepared by a qualified bat biologist experienced with bat eviction and exclusion possessing a Memorandum of Understanding with the California Department of Fish and Wildlife. At a minimum, the mitigation plan shall provide for humane eviction of the existing bat population and creation of artificial day roost habitat, to mitigate impacts resulting from removal of the roost site. MM BIO-2: 1. To the maximum extent practicable, all construction activities associated with the initiation of work on the Project site or initiation of new mining phases shall be scheduled between September 15 and February 1, which is the typical non-nesting season.	

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		2. If the initiation of work in new areas cannot be scheduled during the non-nesting season, prior to the initiation of work on the Project site and each individual phase of mining (e.g., Phase 1A, 1B, etc.), a qualified biologist shall survey all suitable nest trees within 0.25 mile of the work limits for nesting Swainson's hawks, within 500 feet of the work limits for other raptors, and within 250 feet of the work limits for other nesting birds no more than 10 days prior to the start of ground disturbing activities. 3. If nesting Swainson's hawks are found within 0.25 mile, other nesting raptors are found within 500 feet, or other nesting birds are found within 250 feet of the work limits as described in Item 2 above: a. A qualified biologist shall evaluate the potential for the proposed work to disturb nesting activities. The evaluation criteria shall include, but not be limited to, the location/orientation of the nest in the nest tree, the distance of the nest to the work limits, the line of sight between the nest and the work limits, and the description of the proposed work. The nest shall be continually surveyed for the first 24 hours. b. CDFW shall be contacted to review the evaluation and determine if the Project can proceed without adversely affecting nesting activities.	

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		c. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities that occur during the breeding season to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the Project is adversely affecting nesting activities. 4. If no nesting Swainson's hawks are found within 0.25 miles, no other nesting raptors are found within 500 feet, or no other nesting birds are found 250 feet of the work limits as described in measure 2 above, work can proceed as planned. 5. Construction initiated during the non-nesting season and continuing into the nesting season shall not be subject to the above measures. MM BIO-3: 1. Prior to the start of ground disturbing activities for the aggregate plant and each individual phase of mining (i.e. Phase 1A, 1B), surveys for elderberry shrubs shall be conducted within the mixed riparian forest community within 100 feet of the work limits. Any elderberry shrubs identified shall be located on a map and the stems inventoried in accordance with USFWS guidelines. 2. To the maximum extent practicable, all	

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Project activities shall be set back a minimum of 100 feet from all elderberry shrubs with one or more stems of 1-inch diameter at ground level growing within the BSA or adjacent areas. If a 100-foot setback cannot be maintained, implementation of additional mitigation measures described below shall be required in accordance with USFWS guidelines: a. Prior to initiation of construction, the limits of all construction, access roads, staging areas, etc., shall be staked. The staked areas shall be inspected by a qualified biologist. Based on this inspection, additional refinements to construction areas shall be performed as necessary and as feasible to ensure a minimum 20-foot setback from the dripline of all elderberry plants. b. Once the final limits of construction are set, brightly colored fencing (i.e., snow fencing) shall be installed at the 20-foot setback around the perimeter of each elderberry plant or plant group under the direction of a qualified biologist. c. Signs shall be posted every 50 feet along the edge of the VELB avoidance area with the following information: "This area is habitat for the Valley Elderberry Longhorn Beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to	

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		prosecution, fines, and imprisonment.” d. Workers shall be briefed on the need to avoid damage to elderberry shrubs and the possible penalties for not complying with these requirements. All work crews shall be advised of the status of VELB and the need to protect the elderberry shrubs. e. During the initial construction period for each phase of mining, a qualified biologist shall inspect the mining area periodically to assure that the Project is not affecting VELB.	
CULTURAL AND PALEONTOLOGICAL RESOURCES			
Impact CPR-1: Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact CPR-2: Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Potentially significant	Mitigation required: MM CPR-1: Prior to commencement of Phase 8B, markers shall be placed at the geographic boundary coordinates delineating the 50-foot exclusion zone surrounding site CA-FRE-3591 to prevent disturbance by project activities. It is inappropriate to prescribe a specific type of markers at this time, as technological changes over the next 60 years may result in fencing/marker options not currently available. However, the markers shall fulfill	Impacts would be less than significant after mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		the following purpose: (1) provide a clear visual indicator of the exclusion zone and (2) prevent the entry of unauthorized equipment, vehicles, and mine personnel into the exclusion zone. To facilitate the identification and delineation of the boundary and 50-foot exclusion zone for CA-FRE-3591, the site shall be surveyed and Universal Transverse Mercator (UTM) geographic coordinates provided to the County. MM CPR-2: The Project Applicant shall obtain the services of a qualified cultural and paleontological consultant to implement an education program to ensure that construction personnel are aware of potentially sensitive archaeological and paleontological resources. MM CPR-3: If any subsurface cultural resources, including either prehistoric or historic resources, are encountered during construction of the Project, all construction activities in the vicinity of the encounter shall be halted until a qualified archaeologist can examine these materials and make a determination of their significance. Such finds include, but are not limited to, prehistoric grinding implements, stone tools, soapstone bowls, and ornaments	

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		(e.g., beads, pendants) as well as intact building foundations and high concentrations of historical artifacts. The Fresno County Department of Public Works and Planning shall be notified, and the owners, developers and/or successors-in-interest shall be responsible for mitigation of any significant cultural resources pursuant to the CEQA Guidelines.	
Impact CPR-3: Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Potentially significant	Mitigation required: MM CPR-4: If paleontological resources are discovered during project-related activities, the find shall be reported immediately to the County of Fresno Planning Department, who shall provide direction to contact a paleontological monitor. The area of the find shall be avoided until the monitor is on-site. The monitor shall assess the find and make any necessary recommendations, including any procedures to further investigate or mitigate impacts to the find as required by law.	Impacts would be less than significant after mitigation.
Impact CPR-4: Would the Project disturb any human remains, including those interred outside of formal cemeteries?	Potentially significant	Mitigation required: MM CPR-5: In the event that unanticipated human remains are discovered, work shall immediately stop at the discovery location and any nearby area reasonably suspected to	Impacts would be less than significant after mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		overlie adjacent human remains. The Fresno County Coroner shall immediately be contacted to determine whether the cause of death must be investigated. If the coroner has reason to believe that the remains are of Native American origin, he or she will contact the NAHC by telephone within 24 hours (H&SC §7050.5). At the same time, the mine operator shall immediately notify the Fresno County Department of Public Works and Planning, and a qualified archaeologist shall be contacted to evaluate the archaeological implications of the find. MM CPR-6: The CEQA Guidelines (§15164.5) detail steps to be taken when human remains are found to be of Native American origin. If Native American remains are discovered, the operator/landowner shall work with the NAHC to develop and execute an agreement between themselves and the most likely descendant(s) of Native Americans who may be buried in the vicinity by which the human remains and associated burial items shall be treated or disposed, with appropriate dignity. The NAHC and landowner shall follow prescribed steps in Public Resources Code §5097.98, which include but are not limited to the following: The NAHC shall notify those persons it believes to be the most likely to have	

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		descended from the deceased Native American. The most likely descendant(s) may recommend to the landowner the means of treating and disposing of, with appropriate dignity, the human remains and any associated grave goods. The landowner shall ensure the immediate vicinity of the Native American human remains is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations.	
GEOLOGY AND SOILS			
Impact GS-1: Would the Project expose people or structures to potential substantial adverse effects, involving the risk of loss, injury, or death involving: • Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map issued by the State Geologist for the area or based on other substantial evidence of known fault; • Strong seismic ground	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
shaking; - Seismic-related ground failure, including liquefaction; or - Landslides?			
Impact GS-2: Would the Project result in substantial soil erosion or the loss of topsoil?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact GS-3: Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact GS-4: Does the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Greenhouse Gases/Climate Change			
Impact GHG-1: Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
significant impact on the environment?			
Impact GHG-2: Would the Project potentially conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Hazards and Hazardous Materials			
Impact HAZ-1: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact HAZ-2: Would the Project create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact HAZ-3: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
HYDROLOGY AND WATER QUALITY			
Impact HWQ-1: Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater water quality?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact HWQ-2: Would the Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact HWQ-3: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact HWQ-4: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact HWQ-5: Would the Project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, cause flooding on- and off-site, or provide substantial additional sources of polluted runoff?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact HWQ-6: Would the Project place within a 100-year flood hazard area structures which would impede or redirect flood flows?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact HWQ-7: Would the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	Potentially significant	Mitigation required: MM HWQ-1: To mitigate the risk of loss or injury potentially resulting from flooding, the operator shall implement a system to regularly monitor public announcements	Impacts would be less than significant after mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		concerning potential Kings River flooding. At the beginning of each day that employees are to work in areas mapped within the 100-year flood hazard zone, the operator must check with the National Weather Service to determine if flood warnings are in effect. The operator must communicate the flooding potential to all employees each day. Employees must avoid working in portions of the Project site that are within the flood hazard zone. In addition, access to areas of the Project site subject to potential flooding shall be physically demarcated with signage and deterrents such as traffic barricades.	
Impact HWQ-8: Would the Project expose people or structures to impacts from inundation by seiche, tsunami, or mudflow?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
LAND USE AND PLANNING			
Impact LUP-1: Would the Project conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
NOISE AND VIBRATION			
Impact NO-1: Would the Project result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Potentially significant	Mitigation required: MM NO-1: The following specific measures are required to ensure impacts associated with Project dragline excavation are less than significant: 1. The reference sound levels associated with dragline operation shall be verified through noise level measurements immediately upon commencement of dragline operations at the Project site. In the event that actual noise emissions of the dragline exceed the assumptions contained within this analysis, additional noise control measures shall be implemented. Those measures would include replacing fan motors with variable drive motors and/or installation of cooling air inlet and/or exhaust silencers directly to the dragline as required to satisfy the Fresno County Noise Ordinance standards. 2. Except during a public emergency that requires immediate production of aggregates and concrete products, excavation activities using the	Impacts would be less than significant after mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		proposed dragline shall be limited to daytime hours when located within the following distances from noise receivers: a. When operating the mine and aggregates plant only: i. 600 ft from R3, R4, R5, R7, R9, R10. ii. 900 ft from R8. iii. 725 ft from R13. iv. 925 ft from R14. b. When operating the mine, aggregates plant and the hot mix asphalt plant and/or the ready mix concrete plant: i. 600 ft from R3, R4, R5. ii. 750 ft from R7, R9, R10. iii. 1,050 ft from R8. iv. 850 ft from R13. v. 975 ft from R14. 3. Prior to mining within 900 feet of Residences 3, 4, 5, 7, & 9 along Riverbend Avenue, the proposed 10-foot tall berm should be constructed near the western edge of the proposed 100-foot excavation setback. 4. Prior to mining within 900 feet of Residence 10 along Riverbend	

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Avenue, an 11-foot tall berm should be constructed near the western edge of the proposed 100-foot excavation setback. 5. Prior to mining within 900 feet of Residence 13, the proposed 8-foot tall berm should be constructed near the southern edge of the proposed 100-foot excavation setback along the South side of Goodfellow from Riverbend Avenue to 2000 feet West of Riverbend Avenue. 6. Excavation activities within 1,000 feet of an existing residence shall be conducted such that the dragline cooling exhaust fans do not directly face the residence. MM NO-2: The following specific measures are required to ensure impacts associated with concurrent nighttime operation of the aggregates processing plant, mine, and other activities are less than significant: 1. Plant area noise at Receptor 8 shall be reduced 4 dB by implementing noise control measures which could include, but would not be limited to, one or a combination of the	

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		following: a. Aggregate stockpiles could be maintained so as to provide additional shielding of main processing plant noise generation in the direction of Receptor 8. b. The proposed 10-foot tall earthen berm in the vicinity of Receptor 8 could be increased in height. c. An additional sound barrier could be constructed adjacent to the noisiest plant area equipment to provide additional shielding in the direction of Receptor 8. 2. Following implementation of the additional noise control measures, daytime noise tests shall be conducted to confirm compliance with the County's 45 dB exterior noise standard during simultaneous nighttime operation of the aggregate processing plant with other Plant area activities.	
Impact NO-2: Would the Project result in a substantial permanent	Potentially significant	Mitigation required: MM NO-1 & MM NO-2: (see Impact NO-1	Significant and unavoidable after

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
increase in ambient noise levels in the Project vicinity above levels existing without the Project?		above for description).	mitigation.
Impact NO-3: Would the Project cause a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	Less than significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
TRANSPORTATION AND TRAFFIC			
Impact TRANS-1: Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Potentially significant	Mitigation required: MM TRANS-1: The Project Applicant shall pay proportional fair share contributions towards the required identified improvements. The Project Applicant shall enter into traffic mitigation agreements with the County (for non-SR180 improvements) and with Caltrans (for SR 180 improvements). The traffic mitigation agreements shall establish the exact payment amounts and thresholds that define the timing of the required payments.	Significant and unavoidable after mitigation.
Impact TRANS-2: Would the Project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand	Potentially significant	Mitigation required: MM TRANS-1: The Project Applicant shall pay proportional fair share contributions towards the required identified improvements. The Project	Significant and unavoidable after mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
measures, or other standards established by the county congestion management agency for designated roads or highways?		Applicant shall enter into traffic mitigation agreements with the County (for non-SR180 improvements) and with Caltrans (for SR 180 improvements). The traffic mitigation agreements shall establish the exact payment amounts and thresholds that define the timing of the required payments.	
Impact TRANS-3: Would the Project result in any changes in air traffic patterns or present a substantial safety risk?	Potentially significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact TRANS-4: Would the Project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Potentially significant	Mitigation required: MM TRANS-2: The Project applicant shall make the following improvements within one year of commencing operations: Project Driveway at Goodfellow Eastbound left turn and westbound right turn at the Project Driveway at Goodfellow Avenue. Westbound acceleration lane for trucks exiting the site.	Less than significant after mitigation.
Impact TRANS-5: Would the Project result in inadequate emergency access?	Potentially significant	No mitigation measures are required.	Impacts were less than significant before mitigation.
Impact TRANS-6: Would the Project conflict with adopted policies, plans, or programs	Potentially significant	No mitigation measures are required.	Impacts were less than significant before mitigation.

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			
Impact TRANS-7: Would truck traffic generated by the Project result in the Traffic Index (TI) increasing by a factor of 0.5?	Potentially significant	Mitigation required: MM TRANS-3: The Project will contribute its fair share cost for the purposes of improving the structural section of the identified impacted street segments.	Significant and unavoidable after mitigation.

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1.0 INTRODUCTION

The County of Fresno (County) has prepared this Draft Environmental Impact Report (DEIR) in response to Riverbend Sand and Gravel, LLC's (Riverbend or Applicant) submittal of the following applications:

- Surface Mining and Reclamation Plan (SMRP) in accordance with the Surface Mining and Reclamation Act (SMARA);
- Conditional Use Permit (CUP) application in accordance with County Zoning Ordinance Section 858.

Implementation of the Proposed Project (Project) requires discretionary approvals from State and local agencies; therefore the Project is subject to the environmental review requirements of the California Environmental Quality Act (CEQA). The County is the lead agency for the CEQA process.

1.1 Project Summary

The Project is located approximately 1.5 miles southwest of the City of Sanger between the Kings River and Riverbend Avenue. The Project would consist of a multi-phased mining operation for construction grade aggregate (sand and gravel). A "wet mining" method is proposed which utilizes an electric dragline to excavate aggregate from beneath the water. The mined aggregate would be processed at an on-site processing plant with an anticipated annual process rate of 1.6 million tons, as needed to produce 1.25 million tons of finished product. The processed material would be sent off-site for use in regional construction projects or used by an on-site Ready-Mix Concrete (RMC) plant and a Hot Mix Asphalt (HMA) plant. The Project's facilities would also include periodic use of a portable plant to recycle up to 125,000 tons per year (tpy) of concrete and asphalt debris generated on-site and from off-site regional construction projects. Operations are anticipated to ramp-up over a five year period and expected to be on-going for at least 75 years.

The Project encompasses 619 acres of an 833-acre parcel. The remaining 214 acres of the parcel, including the entire existing riparian habitat along the Kings River, a valley oak grove and areas of potential cultural significance, are excluded from the Project. The Project site is currently occupied by orchards and vineyards with several farm residences nearby. Reclamation of the Project site would create approximately 268 acres of reclaimed farmland and approximately 351 acres of open space, riparian and open water wildlife habitat.

Section 2.0 provides a detailed description of the Project.

1.1.1 Project Purpose and Need

1.1.1.1 Project Purpose

In order to allow regional improvements such as housing, commercial development, industrial development, and infrastructure to be constructed as anticipated in the County's General Plan, the region must have a consistent and predictable source of competitively priced building materials,

including aggregate. The purpose of the Project is to provide a local source of aggregate that will augment the existing supply and contribute to projected future needs in Fresno County.

1.1.1.2 Project Need

An economic impact analysis is not required under CEQA. However, a review of the socio-economic issues related to the demand for aggregate is an important element to address the need for the Project (14 CCR Section 15131).

Regional Supply and Demand

In California, the supply and demand for aggregate resources are tracked by the California State Department of Conservation's California Geological Survey (CGS). The CGS regularly analyzes the supply and demand of aggregate resources in California, and publishes reports indicating the past consumption and anticipated future demand for regional aggregate supplies. The various regions studied throughout the State are market areas referred to as "Production-Consumption Regions." The Project is in the Fresno Production-Consumption (P-C) Region, which services the needs of portions of central and eastern Fresno County and portions of southern Madera County. According to the California Department of Finance (January 2013), population in the region is expected to nearly double in the next 50 years from 1,083,705 in 2010 to 1,989,331 in 2060 (Appendix H).

The CGS report titled *Aggregate Availability in California – Map Sheet 52* (updated 2012) uses the Department of Finance future population estimates and historical per capita consumption to estimate future aggregate demand. Map Sheet 52 indicates that the P-C Region's projected 50-year aggregate demand as of January 1, 2011, was approximately 435 million tons (MMtons). Existing permitted reserves at that time were indicated to be 46 MMtons. However, that estimate did not include the 63 MMtons approved for the Sanger-Centerville Expansion (Vulcan Materials Company) in 2007 or the 50 MMtons approved for the Madera Quarry (Shimmick Construction) in Madera County in 2010. In 2012, the Carmelita Mine and Reclamation project (Colony Land Company) was approved for 85 MMtons. Those three projects added 198 MMtons (net finished aggregate product) of permitted reserves to the P-C Region. Without adjusting for reserves consumed since January 1, 2011, total permitted reserves in the P-C region would be 244 MMtons.

In 2010, Map Sheet 52 indicated that the P-C Region consumed approximately 6.0 MMtons per year (MMtpy). At that consumption rate for the four-year period from 2011 through 2014, approximately 24 MMtons of permitted reserves would have been consumed leaving 220 MMtons of permitted reserves at the beginning of 2015, or approximately 50% of the region's 50-year aggregate demand.

The Riverbend Project, if approved, would add 70 MMtons increasing the permitted aggregate reserves to 290 MMtons, or 67 % of the 50-year demand. If the proposed Austin Quarry project in Madera County is approved, it would add 250 MMtons. Total permitted reserves in the region would then be 540 MMtons.

Future consumption of permitted reserves is affected by the maximum annual sales permitted for each site and annual consumption rates as described in the following two scenarios.

Table 1-1 shows the existing permitted aggregate operations in the Fresno P-C Region, assuming Austin Quarry and Riverbend were both permitted. If Austin and Riverbend were both approved, annual permitted sales would be 10.4 MMtpy. (Central Valley RM & River Rock annual sales are not included in the total since their permits expire in 2015 and 2016 respectively.)

Table 1-1. Existing Permitted Aggregate Operations

Operation	Maximum Annual Sales Permitted (million tons)
Cent. Valley RM (Sante Fe) ¹	Negligible
River Rock (Vulcan) ²	Negligible
Rockfield (Cemex) ³	1.0
Kings River (CMI) ⁴	1.0
Sanger (Vulcan) ⁵	2.5
Madera Quarry ⁶	0.9
Carmelita ⁷	1.25
Austin Quarry ⁸	2.5
Riverbend ⁸	1.25
Total	10.4⁹

¹. Permit expires in 2015

². Permit expires in 2016

³. Permit expires in 2023

⁴. Permit expires in 2043

⁵. Reserves depleted in 2059

⁶. Reserves depleted in 50 years

⁷. Not yet operational

⁸. Proposed

⁹. CVRM & River Rock not included since their permits expire in 2015 and 2016 respectively.

Assuming that Carmelita, Riverbend and Austin Quarry are fully operational in 2015 and that annual sales would equal the permitted annual sales, aggregate consumption in the next 50 years would be as follows (not all mine projects are permitted so this assumption assumes a maximum reserve scenario):

- 2023 (in 8 years): Rockfield permit expires, 83 MMtons would be consumed, and annual permitted sales would drop to 9.4 MMtons.
- 2043 in (in 29 years): CMI permit expires, an additional 188 MMtons would be consumed and annual permitted sales would drop to 8.4 MMtons.
- 2060 (in 45 years): Sanger reserves would be depleted, an additional 143 MMtons would be consumed and annual permitted sales would drop to 5.9 MMtons.

- 2065 (in 50 years): Madera Quarry's reserves would be depleted, an additional 30 MMtons would be consumed and annual permitted sales would drop to 5.0 MMtons.

Total consumption for the next 50 years would be 444 MMtons or 9 MMtons more than the 435 MMtons projected in Map Sheet 52. The remaining permitted reserves would be 96 MMtons. However, at the annual consumption rate of 11 MMtons/y in 50 years, as estimated by Map Sheet 52, there would be less than 9 years of reserves remaining.

It should be noted that the 50-year demand is simply a measuring tool and not a limit. In a healthy supply and demand market, having more than 50 years of permitted reserves would provide more sources for aggregate products and should result in more competitive pricing for the consuming public.

In order to meet the required specifications for the broad range of aggregate products needed in the construction materials market, there needs to be a suitable balance of available rock and sand, roughly in the 50% rock/50% sand ratio. However, it appears that future market supply in the region may hit an imbalance with far more rock in supply than sand. This imbalance is primarily based on greater hard rock resources being developed and permitted than that of alluvial deposits which contain natural sand resources as well as rock. If the proposed Austin Quarry project in Madera County is approved, 300 MMtons (Madera Quarry 50 MMtons + Austin Quarry 250 MMtons), or 55% of the 546 MMtons of the region's reserves, would be from hard rock quarries, creating an imbalance in the rock to sand regional production. Technology allows for the production of sand from rock; however this process is more expensive than the washing and processing of natural sand. Manufactured sand is not the desired product by the local Ready-Mix Concrete (RMC) producers or users. Producers of RMC have traditionally paid more and travelled great distances for natural concrete sand than manufactured sand because it flows better, is easier to pump and in some cases requires less cement than manufactured sand. With 55% of the local operations being rock reserves, natural occurring sand from the alluvial deposit on the Riverbend site on the Kings River will be critical to meet the sand demand for the region, including the demand of governmental agencies like Caltrans and the Fresno County Department of Public Works.

The California Department of Conservation (DOC) classifies areas of known important mineral commodities, referred to as Mineral Resource Zones (MRZ), so that these areas may be given land use consideration by local agencies in their general plan preparation process. DOC classified most of the Kings River Resource Area as MRZ-2 (including the Riverbend Project site), indicating that significant mineral deposits (i.e., sand and gravel) of regional or statewide significance are present, or there is a high likelihood for their presence.

In 1988, the State published SMARA Designation Report No. 8 (DR-8), which designated the Kings River Resource Area, including the Project site, as having construction grade aggregate deposits that are of regional significance (*Designation of Regionally Significant Construction Aggregate Resources in the Fresno Production Consumption Region, SMARA Designation Report #8*, DOC and DMG, July 1988). Distance matters since transportation plays a major role in the cost of aggregate to the consumer.

Aggregate is a low-unit-value, high-bulk-weight commodity, and it must be obtained from nearby sources to minimize both the dollar cost to the aggregate consumer and other environmental and economic costs associated with transportation. If nearby sources do not exist, then transportation costs will significantly increase the cost of the aggregate by the time it reaches the consumer. Transporting aggregate from distant sources also results in increased fuel consumption, air pollution, traffic congestion, and road maintenance. Moreover, transportation cost is the principal constraint defining the market area for an aggregate mining operation.

Aggregate Quality and Use

The highest quality aggregate is that which meets the California Department of Transportation's specifications for use in PCC and AC. Forming 80 to 95% of the material volume in the mix, aggregate provides the bulk and strength to PCC and AC.

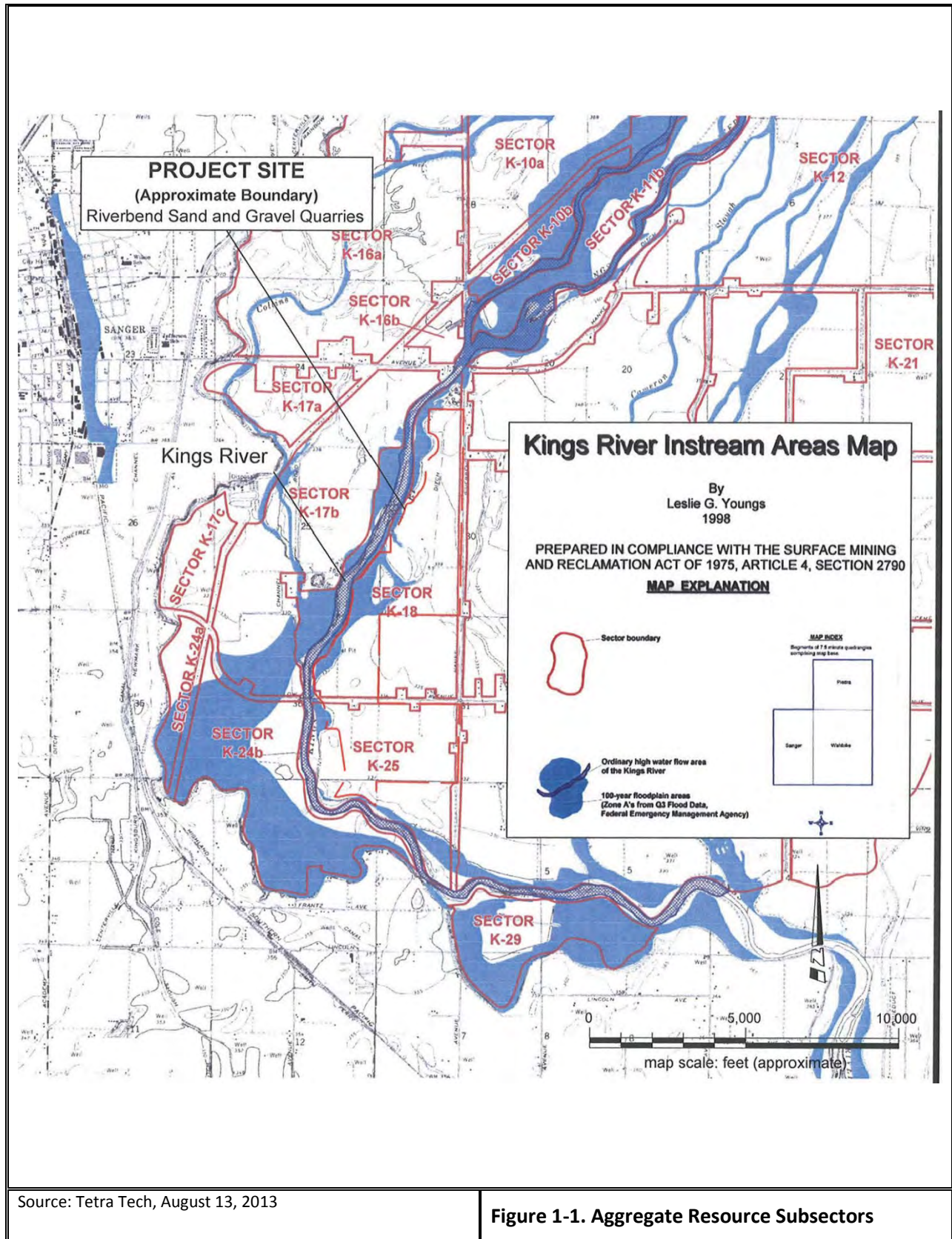
The material specifications for PCC and AC aggregate are more restrictive than specifications for other applications such as Class II base, subbase, and fill. These restrictive specifications for use as PCC or AC aggregate make such acceptable deposits the scarcest and most valuable aggregate resources. Aggregate produced from such deposits can be, and commonly is, used in applications other than concrete. PCC and AC-grade aggregate deposits are of major importance when planning for future availability of aggregate commodities because of their versatility, value, and relative scarcity (CGS, 2006). The aggregate deposits in the Kings River MRZ-2 zone, where the Project is located, qualify for use both as PCC or AC aggregate, making it one of the most important and most valuable aggregate sites in Fresno County.

Aggregate from a solid, hard rock deposit is typically more expensive than that from an alluvial deposit due to the additional costs associated with the ripping, drilling and blasting, which are necessary to remove material from most quarries, and the additional crushing required to produce the various sizes of aggregate. Manufacturing sand by crushing is more costly than mining and processing naturally occurring sand (CGS, 2006). The aggregate on the Project site is an alluvial sand and gravel deposit with naturally occurring sand that does not require the additional crushing needed to manufacture sand associated with hard rock quarries.

1.1.2 Project Objectives

A clear statement of the Project objectives allows for the analysis of reasonable alternatives to the Project. The following are the objectives for the Project:

1. Provide a reliable and sustainable, local source of high quality aggregate to help meet the current and long-term demand (75 years) for construction materials in Fresno County.
2. Create additional, long-term supply of local aggregate reserves.



3. Utilize aggregate reserves from property already designated by the State and County as MRZ-2 (Mineral Resource Zone containing mineral resources of regional significance, i.e. sand and gravel).
4. Utilize high quality aggregate resources that meet the California Department of Transportation's stringent specifications for use in PCC and AC.
5. Provide an additional local source of construction aggregate with enough annual sales capacity (1.25 million tons) to encourage a healthy competitive market.
6. Obtain aggregate resources with access to an efficient local road network and State Highway system.
7. Create a project that would not require dewatering of groundwater.
8. Create an environmentally sound project that would balance the recovery of the aggregate resource with the protection of other resources including wildlife habitat, groundwater, surface water, and air quality.
9. Create a project that would return a significant amount of mined land back to farming.
10. Create local quality jobs, while also benefiting local downstream businesses and creating enhanced tax revenue to the County.

1.2 CEQA Process

1.2.1 CEQA Process Summary

CEQA is a California statute passed in 1970 to institute a statewide policy of environmental protection. CEQA does not directly regulate land uses, but instead requires State and local agencies within California to follow a protocol of analysis and public disclosure of environmental impacts of proposed projects and adopt all feasible measures to mitigate those impacts.

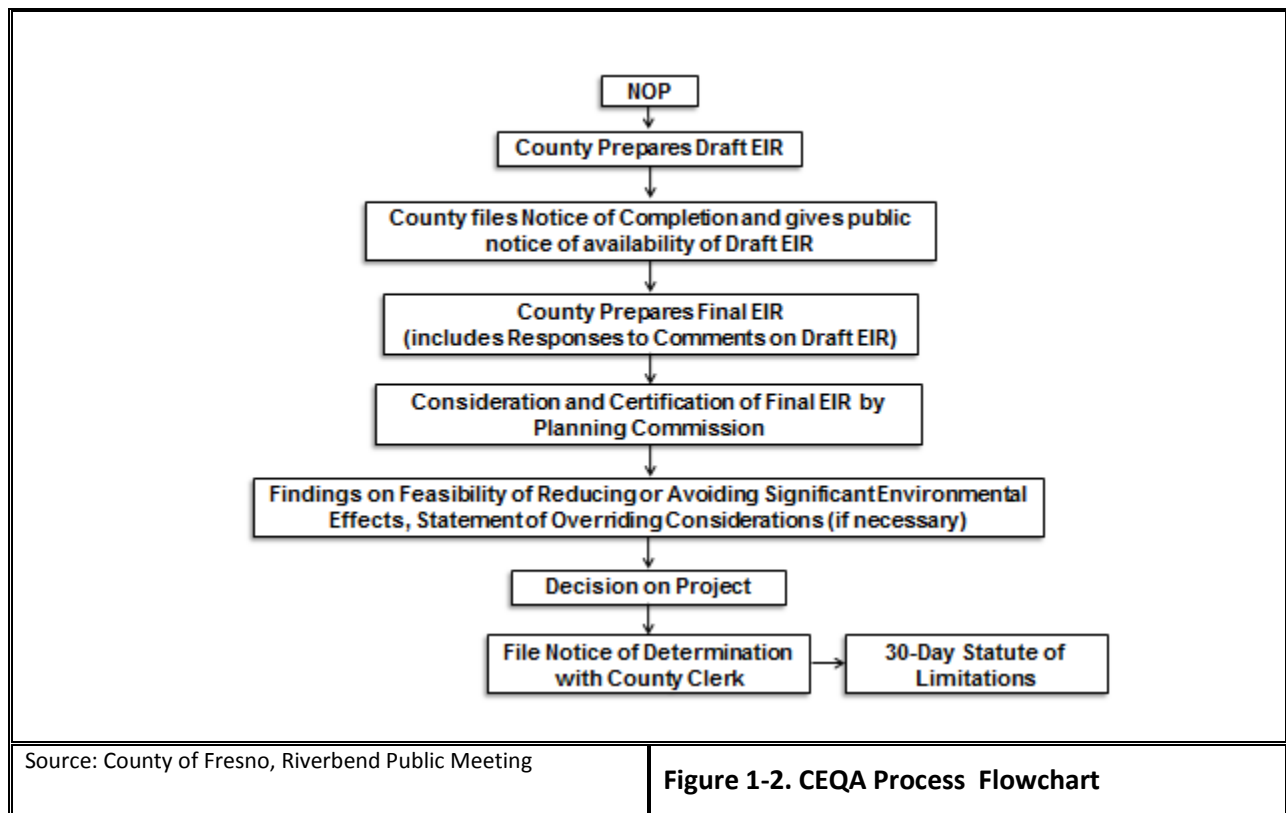
The CEQA Guidelines (Guidelines) were developed to explain and interpret the law for both the public agencies required to administer CEQA and for the public generally. They are found in the California Code of Regulations, in Division 6, Chapter 3 of Title 14. The Guidelines provide objectives, criteria and procedures for the orderly evaluation of projects and the preparation of environmental impact reports, negative declarations, and mitigated negative declarations by public agencies. The fundamental purpose of the Guidelines is to make the CEQA process comprehensible to those who administer it, to those subject to it, and to those for whose benefit it exists. To that end, the Guidelines are more than mere regulations which implement CEQA, as they incorporate and interpret both the statutory mandates of CEQA and the principles advanced by judicial decisions.

The involvement of the public during the CEQA process is an integral part of the environmental analysis. Public involvement helps to refine the proposed action, identify issues, explore possible alternatives and identify interested and affected persons. The sections below describe the actions taken to ensure that the public has been and will be appropriately involved in this process.

A detailed flow chart of the entire CEQA process is provided in Appendix A of the CEQA Guidelines. Figure 1-2 is a simplified flow chart of the CEQA process as it applies to this Project. In general, the CEQA process for an EIR involves the following steps:

- Lead Agency preparation of an Initial Study and/or determination of the need for an EIR;
- Notice of Preparation;
- Scoping process;
- Preparation of a DEIR;
- Notice of Completion and DEIR public and agency review process;
- Response to comments;
- Preparation of a final EIR;
- Notice of Determination.

These steps and how they are being addressed for this Project are discussed in the following sections.



1.2.2 Initial Study and Notice of Preparation

In accordance with CEQA Guidelines Section 15063, an Initial Study (IS) should be conducted to determine if a proposed project may have a significant effect on the environment. If the CEQA Lead Agency can determine that an EIR will clearly be required for a proposed project, an IS is not required.

The County, acting in its capacity as Lead Agency, determined that an EIR would be required for this Project; therefore, an IS was not prepared.

After deciding that an EIR is required for a project, the Lead Agency shall send to the Office of Planning and Research (OPR) and each responsible and trustee agency a Notice of Preparation (NOP) stating that an EIR will be prepared. This notice shall also be sent to any Federal agency involved in approving or funding the project and the public. The NOP shall provide sufficient information describing the project and the potential environmental effects to enable the public and agencies to make a meaningful response.

The County submitted the NOP for this Project to OPR on August 1, 2013. The State Clearinghouse posted it with the County Clerk and assigned the Project the following identification number: 2013071097. A copy of the NOP was made available at the County office and on the County website. The NOP was also published in the Sanger Herald Newspaper. A copy of the NOP is in Appendix A

1.2.2 Scoping Process

The public scoping process provides a mechanism for focusing and clarifying the issues to be addressed in the DEIR by actively obtaining input from the public and interested Federal, State, Tribal, and local agencies. Information received during the scoping process assists the Lead Agency in identifying potential environmental issues, impacts, project alternatives, and mitigation measures associated with the Project.

The scoping period for this Project was initiated on August 1, 2013, with the publication of the NOP, and formally ended on September 16, 2013. The County circulated the NOP for public review and held a public meeting on August 29, 2013, from 5:30 p.m. to 7:00 p.m., in the Multi-Purpose Room at Sanger High School.

Table 1-1 below lists the written comments received during the scoping period. Copies of these letters, the list of those who attended the public meeting and a copy of the presentation provided during the meeting are located in the Scoping Report (Appendix A).

Table 1-2. Commenters and Affiliations

Commenter	Affiliation	Date Received
Frank Daniele	The County of Fresno, Department of Public Works	8/01/13
Fred Rinder	The County of Fresno, Department of Agriculture	8/05/13
Roy Jimenez	The County of Fresno, Policy Planning Unit	8/08/13
Betsy Lichti	California Department of Public Health	8/27/13
Dave Singleton	Native American Heritage Commission	8/28/13
Audrey Osbourne	Traditional Choinumni Tribe	8/29/13

Commenter	Affiliation	Date Received
James Herota	Central Valley Flood Protection Board	9/03/13
Jeffrey Single	California Department of Fish and Wildlife, Central Region	9/04/13
David Moxley	Resident	9/09/13
Gary Grey	Resident	9/10/13
Mark Amorino	Consolidate Mosquito Abatement District	9/11/13
David Padilla	California Department of Transportation, District 6	9/13/13
Nicole Zieba	City of Reedley	9/13/13
John Gray	Resident	9/16/13
Janet Gardner	The County of Fresno, Environmental Health Division	9/16/13
Jessica Willis	San Joaquin Valley Air Pollution Control District	9/16/13
Betsy Lichti	California Department of Public Health	9/27/13

1.2.3 Draft Environmental Impact Report

A DEIR is intended to serve as a document to inform public agency decision-makers and the public of the potentially significant environmental effects associated with a proposed project, identify ways to minimize or eliminate the significant effects, and evaluate a reasonable range of alternatives that meet the major objectives of the proposed project but further reduce or avoid significant environmental effects.

CEQA Guidelines Section 15151 contains the following standards of adequacy:

“An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and good faith effort at full disclosure.”

This DEIR addresses the issues identified during the scoping period and evaluates the potentially significant adverse environmental impacts that may be associated with the Project. It also identifies appropriate and feasible mitigation measures and alternatives in accordance with CEQA. The scope and organization of this DEIR are discussed in Section 1.12. The DEIR conforms to the following:

- California Environmental Quality Act;
- State CEQA Guidelines; and

- County of Fresno, Regulations and Procedures for the Implementation of the California Environmental Quality Act, October 23, 2007.

1.2.4 Notice of Completion and Draft EIR Review Process

Once the DEIR is completed, the Lead Agency shall file a Notice of Completion with OPR and request comments on the DEIR for this Project. The Notice of Completion was filed on July 17, 2014 and distributed to public agencies, other affected agencies, adjacent cities, and counties, members of the public, and any parties who have submitted a written request for a copy of the DEIR. It was also posted in the Sanger Herald Newspaper on July 17, 2014.

The 45-day public review period for the DEIR started on July 17, 2014 and a copy of the DEIR is available for public review at the following locations:

Fresno County Public Library
2420 Mariposa Street
Fresno, CA 93721

Sanger Branch Library
1821 Seventh Street
Sanger, CA 93657

Fresno County Department of Public Works and Planning Website:

<http://www.co.fresno.ca.us/departments.aspx?id=6030>

Written comments on the DEIR must be submitted to the County contact no later than September 2, 2014:

Briza Sholars, Planner III
County of Fresno
Development Services Division
Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Email: bsholars@co.fresno.ca.us

1.2.5 Response to Comments, Final EIR, Certification, Findings and Notice of Determination

Following the close of the public review period, written comments on a project will be compiled and responses generated in conjunction with the preparation of the Final EIR. The Final EIR will consist of a list of all persons, organizations, and public agencies commenting on the DEIR; copies of the comments received on the DEIR; responses to comments; and any other pertinent information added by the Lead Agency. Prior to approving a project, the Lead Agency shall certify that the Final EIR has been completed in compliance with CEQA and that it reflects the agency's independent judgment and analysis.

No public agency shall approve a project for which an EIR has identified one or more significant environmental effects unless the agency makes findings for each of those significant effects. CEQA Guidelines Section 15093 states:

- a) *“CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered ‘acceptable.’*
- b) *When the lead agency approves a project which will result in the occurrence of significant effects which are identified in the final EIR but not avoided or substantially lessened, the agency shall state in writing the specific reasons to support its action based on the final EIR and/or other information in the record. The statement of overriding considerations shall be supported by substantial evidence in the record.”*

The Lead Agency shall file a Notice of Determination (NOD) within five working days after deciding to carry out or approve the project. The Final EIR will serve as the CEQA compliance document for the decision-making agency (in this case the County) and any other agencies that may be responsible for review of the Project and issuance of required permits.

1.3 Mitigation Monitoring and Reporting

CEQA requires adoption of a reporting or monitoring program for those measures or conditions placed on a project to mitigate or avoid adverse effects on the environment. The law states that the monitoring program shall be designed to ensure compliance during project implementation. A final Mitigation Monitoring and Reporting Program (MMRP) would be adopted by the County upon certification of the Final EIR.

The MMRP will contain the following elements:

- A list of measures that will act to mitigate significant impacts on the environment and the actions necessary to ensure compliance.
- A procedure of compliance and verification that will be outlined for each action necessary. This procedure will designate who will take action, what action will be taken and when, and to whom and when compliance will be reported.
- The MMRP will provide focused, yet flexible guidelines. As monitoring progresses, changes to compliance procedures may be necessary based upon recommendations by those responsible for the program.

The County is the primary agency for monitoring the implementation of the majority of the mitigation measures identified in the EIR and ensuring compliance with these measures. In some cases, another public agency will oversee implementation of one or more measures. The Applicant is responsible for funding the implementation of each measure.

1.4 Agency Involvement

1.4.1 Lead Agency

Guidelines Section 15367 defines the Lead Agency as “... *the public agency, which has the principal responsibility for carrying out or approving a project.*” Criteria considered in identifying the Lead Agency include whether the agency: 1) has the greatest responsibility for supervising or approving the project as a whole; 2) is an agency with the general governmental powers; and 3) will act first on the project in question (Guidelines §15051). As discussed above, the Lead Agency for the Project is the County.

This DEIR reflects the independent judgment and analysis of the County as required by the Guidelines. Lists of organizations and persons consulted and the report preparation personnel are provided in Section 6 of this DEIR.

1.4.2 Trustee, Responsible and Tribal Agencies

In addition to the County acting in its capacity as Lead Agency as described above, there are a number of other agencies that could have discretionary authority over the Project, including Trustee, Responsible and Tribal Agencies.

A Trustee Agency is a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. The California Department of Fish and Wildlife (CDFW), the U.S. Fish and Wildlife Service (USFWS), and the Central Valley Regional Water Quality Control Board are Trustee Agencies for this Project.

A Responsible Agency is a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or prepared an EIR. For the purposes of CEQA, the term “Responsible Agency” includes all public agencies other than the Lead Agency which have discretionary approval power over the project. The San Joaquin Valley Air Pollution Control District (SJVAPCD), the California DOC, and the Central Valley Regional Water Quality Control Board are Responsible Agencies for this Project.

To comply with the Executive Order regarding Government-to-Government actions and when a proposed project may have an effect on an Indian reservation, notice and opportunity to comment must be provided to the Tribal Agencies. This is often accomplished by contacting the Native American Heritage Commission.

1.5 Permits, Approvals and Regulatory Requirements

Table 1-2 identifies permits and approvals that will be required or are anticipated to be required, as well as key regulations that the Project will need to comply with prior to and/or during implementation and

reclamation of the Project. Section 3.0, Environmental Impact Analysis, provides detailed discussions of the regulatory requirements for the Project as they relate to each of the resource areas evaluated.

Table 1-2. Anticipated or Required Permits, Approvals and Key Regulatory Requirements

AGENCY NAME	PERMIT/APPROVAL/COMPLIANCE
FEDERAL	
US EPA	Endangered Species Act (1973), National Historic Preservation Act (amended 1992), American Indian Religious Freedom Act, Federal Water Pollution Control Act, Clean Water Act, National Pollutant Discharge Elimination System Permit, Clean Air Act, Resource Conservation and Recovery Act (RCRA)
US Fish and Wildlife Service	Endangered Species Act Section 7 Consultation
US Army Corp of Engineers	Clean Water Act Section 404 Nationwide Permit
STATE	
Office of Mine Reclamation (OMR)	California Surface Mining and Reclamation Act (SMARA), Reclamation Plan, Financial Assurance Cost Estimate (FACE)
	California Code of Regulations (CCR) Title 14, Division 2, Chapter 8, Subchapter 1, Article 9 0 Reclamation Standards
Cal EPA – DTSC	RCRA/Hazardous Waste Generator Regulations (implemented by CUPA), Hazardous Materials Business Plan (implemented by CUPA), Emergency Planning and Community Right to Know Act (EPCRA)
Central Valley Regional Water Quality Control Board	Porter Cologne Water Quality Act, Clean Water Act, National Pollutant Discharge Elimination Systems Permit, Storm Water General Permit, Report of Waste Discharge (WDR), Aboveground Petroleum Storage Act (ASPA) and SPCC (implemented by CUPA)
California Department of Fish and Wildlife	Section 1600, Streambed Alteration Agreement, State Endangered Species Consultation, Incidental Take Permit (ITP)
State Historic Preservation Office (SHPO)	National Historic Preservation Act Section 106 Consultation
LOCAL	
County of Fresno - Department of Public Works and Planning	CEQA/EIR Lead Agency, Conditional Use Permit, SMARA Lead Agency, Land Use Zoning, General Plan

AGENCY NAME	PERMIT/APPROVAL/COMPLIANCE
County of Fresno – Health Department (CUPA)	Hazardous Materials Business Plan, Aboveground Petroleum Storage Act, Spill Prevention, Control and Countermeasure Plan (SPCC), Hazardous Waste Generator Regulations, Underground Storage Tank Regulations, Domestic Water Supply Permit, Asbestos Containing Materials and Lead Based Paint Regulations, Septic System Permit
San Joaquin Valley Air Quality Control District	Authority to Construct, Permit to Operate, Air Quality Prohibitory Regulations
County of Fresno, Fire Department	Hazardous Materials Business Plan, Emergency Response

1.6 Areas of Known Controversy and Issues to be Resolved

This section provides a brief summary of the areas of known controversy based on the written and verbal comments received during the scoping period and the public meeting. In order to fully identify the issues raised, copies of the letters/emails are provided in the Scoping Report (Appendix A). These comments will be incorporated into the EIR Administrative Record for the Project.

1.6.1 Biological Resources

- Conduct focused biological surveys by qualified biologists during appropriate survey periods.
- Consider the Project's potential adverse effect on wildlife corridors and river access.
- Address the potential for shallow waters in ponds and depressions to promote conditions which would further enhance the habitat for mosquito development.
- Address potential impacts to nesting birds.
- Obtain the appropriate permits from the Trustee and Responsible agencies.
- Evaluate impacts to the Waters of the State.
- Exclude the riparian area along the Kings River from the Project. The proposed buffers may not be sufficient.
- Address the Project's potential impacts to raptors and burrowing owl as well as other listed or sensitive species.
- Address concerns about setback/buffer from sensitive biological areas (e.g. potential nests).

1.6.2 Air Quality

- Calculate and analyze existing and post-project Project related emissions with approved models and methods (i.e., CalEEMod).
- Address all phases of the Project (construction and operations).
- Consider air quality impacts from stationary, area, fugitive, and vehicular sources.
- Consider air quality impacts from both direct and indirect sources.
- Address regional and local impacts.
- If needed, use a Voluntary Emission Reduction Agreement (VERA) to reduce Project impacts.
- Conduct a health risk assessment (HRA) for all phases of the Project.
- Provide a clear explanation of the methodology and assumptions. Include modeling output in appendices to the Project EIR.
- Identify whether there will be a cumulatively considerable net increase of any criteria pollutants or precursors for which the SJV air basin is in non-attainment.
- Use all feasible mitigation measures if significant impacts are identified.
- Address the Project's potential odor impacts.
- Obtain an Authority to Construct and Permit to Operate.
- Comply with all applicable SJVAPCD rules and regulations.

1.6.3 Water Resources

- Address concerns over contaminants entering the Kings River.
- Address concerns related to potential commingling of contaminants resulting from Project activities with agriculture contaminants.
- Address the Project's potential interference with groundwater recharge.
- Address erosion issues along the Kings River.
- Address concerns related to the management and impact to existing domestic and agricultural wells.
- Ensure proper abandonment of wells and the risk of contamination to water supply.
- Address proper handling of waste waters.
- Obtain a permit as a public water system from the Fresno County Department of Public Health and comply with its requirements.
- Construct any wells in compliance with the applicable regulatory requirements.

- Address the potential for shallow waters in ponds and depressions to promote conditions which would further enhance the habitat for mosquito development.
- If necessary, obtain a permit from the Central Valley Flood Protection Board.
- Address concerns regarding interference of vegetation with the integrity of the adopted flood control plan.
- Address the need for mitigation to avoid decreasing floodway channel capacity.
- Address hydraulic impacts that could impede flood flows, reroute flood waters and/or increase sediment accumulation.
- Address whether mitigations measures are needed for channel and levee improvements and maintenance.
- Address the Project's impacts on Hanke Ditch.
- Analyze 50 year and 100 year flood events.

1.6.4 Hazardous Materials and Waste

- Address the proper management of hazardous materials and waste.
- Ensure the preparation of a Hazardous Materials Business Plan.
- Address concerns related to the proper management of any underground tanks that may be discovered during Project activities.

1.6.5 Traffic and Transportation

- Conduct a detailed traffic analysis.
- Address the impact of additional trucks on the local roads.
- Address the cumulative impact from the project in conjunction with other mining operations and existing traffic.
- Address concerns related to long term increases in traffic.
- Address concerns related to wear and tear on the impacted roads and congestion at intersections.
- Convert trucks trips to Passenger Car Equivalents (PCEs).
- Evaluate average daily trip ends and AM and PM peak hour volumes.
- Address and justify trip distribution.
- Analyze changes in the traffic index (TI).
- Address the need for turn pockets and/or acceleration/deceleration lanes.

- Address associated air emissions.

1.6.6 Noise

- Address compliance with nighttime noise standards.

1.6.7 Land Use

- Address concerns regarding the loss of prime agricultural land and feasibility of replacement of lost agricultural lands.
- Consider using the Land Evaluation and Site Assessment (LESA) model.
- Address whether the Kings River Regional Plan and Fresno County General Plan require updating to address amount of mining activities in the area in light of a public comment that these documents do not provide appropriate guidelines.
- Consider if there is a need for another mine in the area.
- Conduct a comprehensive analysis of the Project's potential cumulative impacts.
- Address the Project's potential impacts to recreational use of the Kings River and public access to the Kings River.
- Address concerns regarding the Project's impacts on property values in the area.
- Address the Project's compatibility with the Sanger and Reedley Schools environmental river bottom park laboratory directly across the river from the Project.
- Consider the Coalinga Aggregate Train as an alternative to the Project.
- Evaluate economic justification for the Project.
- Address the Project's compliance with Williamson Act.
- Comply with the County of Fresno General Plan.

1.6.8 Cultural

- Carefully evaluate the culturally sensitive area where the Project is located.
- Address operational controls necessary to protect cultural resources, consider requiring the employment of Native American Monitors.
- Identify mitigations to address accidentally discovered archeological resources.
- In culturally sensitive areas, engage services of a certified archaeologist and a culturally affiliated Native American to monitor all ground disturbances associated with the Project.
- Make provisions for discovery of Native American human remains.

1.6.9 Aesthetics

- Address the Project's visual impacts from the standpoint of the Kings River recreational users.

1.7 Environmental Issues Not Analyzed in the Draft EIR

Based on the CEQA Guidelines thresholds of significance, the following topical environmental issues were determined not to be significantly affected by the implementation of the Project and do not require further analysis in this DEIR (Guidelines Section 15128).

1.7.1 Mineral Resources

CEQA Appendix G Threshold (a) – Would the project result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state? and

CEQA Appendix G Threshold (b) – Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated in a local general plan, specific plan, or other land use plan?

Implementation of the Project would not result in the loss of availability of a known mineral resource that is either locally-important or of value to the residents in the region or the State. Rather, the Project proposes to develop this resource. As discussed in Section 1.1.1.2, the Fresno Production-Consumption (P-C) Region has an approximate 50 percent deficit in permitted aggregate resources necessary to meet the 50-year demand horizon. Therefore, the Project, once permitted, would increase the permitted aggregate resources, resulting in a beneficial impact.

1.7.2 Population and Housing

CEQA Appendix G Threshold (a) – Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The number of employees would fluctuate with seasonal demand with an estimated 38 on-site employees during the peak operating season. The California Employment Development Department reported a 12.5 percent unemployment rate in December 2013 for Fresno County. Given this unemployment rate, future employees would be expected to come from the local labor pool and would not result in an in-migration inducing a substantial population growth or need for additional housing. Therefore, no impacts would result.

CEQA Appendix G Threshold (b) – Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

The Project site contains four residences that would be removed as a result of Project implementation. However, the removal of these housing units would not result in a substantial displacement of housing, and no impacts would occur.

CEQA Appendix G Threshold (c) – Would the Project displace substantial numbers of existing people, necessitating the construction of replacement housing elsewhere?

The numbers of persons displaced from the removal of housing would not be considered substantial and no impacts would result.

1.7.3 Public Services

CEQA Appendix G Threshold (a) – Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, or other public facilities?

The number of employees needed for the Project operations and the nature of the Project would not require a demand for public services such as police and fire protection services, schools, parks, or other public facilities.

A NOP comment stated that the Project would be incompatible with Sanger and Reedley School's environmental river bottom park laboratory. The City of Sanger owns approximately 60 acres west of the Kings River and just north of Goodfellow Avenue. The City of Sanger has stated there is no active usage of that property either by Sanger and/or Reedley Schools and that such land is not currently available for regular access by the public (City of Sanger, September 2013).

Security fencing is proposed along any property line abutting a public right-of-way and around any extraction area where slopes steeper than two feet horizontal to one foot vertical are maintained. Therefore, no physical alteration to governmental facilities would result, and no impacts would occur.

1.7.4 Recreation

CEQA Appendix G Threshold (a) – Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The employees needed for the Project operations could use recreational facilities in the vicinity. However, as discussed above, the employees would be local residents who may already use public recreational facilities. Moreover, it is unlikely that all the employees would use a single recreational facility at the same time. There currently is no public access to the Kings River from the Project site and public access is not proposed as part of the Project. As a result, any use of recreational facilities resulting from Project implementation would not result in physical deterioration, and thus no impacts would result.

CEQA Appendix G Threshold (b) – Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The Project does not include or require recreational facilities, and thus no significant impacts would result.

1.7.5 Utilities and Service Systems

The NOP stated that Utilities and Service Systems may be an area that would require a detailed evaluation in the DEIR. Based on the following reasons, subsequent to publishing the NOP, a determination was made that there would not be any impacts associated with the Utilities and Service Systems.

CEQA Appendix G Threshold (a) – Would the project exceed wastewater treatment requirements of the Applicable Regional Water Quality Control Board?

Domestic wastewater would be processed on-site by a septic system and would not be discharged off-site. The septic system would be designed according to Fresno County standards and would not exceed the wastewater treatment requirements of the Central Valley Regional Water Quality Control Board. Section 3.6, Geology and Soils, provides a discussion on the adequacy of soils for the proposed septic system. Process water would be managed in accordance with BMPs and not discharged as wastewater. Therefore, no impacts would result.

CEQA Appendix G Threshold (b) – Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The Project would not require the construction or expansion of a water or wastewater treatment facility. Therefore, no impacts would result.

CEQA Appendix G Threshold (c) – Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The Project would not require or result in the construction of new stormwater drainage facilities. A Storm Water Pollution and Prevention Plan (SWPPP) would be prepared and the approved BMPs would be implemented. Stormwater is discussed in detail in Section 3.9 Hydrology and Water Quality. Therefore, no impacts would result.

CEQA Appendix G Threshold (d) – Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Water for the Project would be provided by existing on-site domestic and irrigation wells. A Water Supply Assessment was prepared for the Project and concluded that there would not be significant impacts on groundwater supplies. This is discussed in detail in Section 3.9, Hydrology and Water Quality. Therefore, no impacts would result.

CEQA Appendix G Threshold (e) – Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the providers existing commitments?

The Project would not be discharging wastewater to a wastewater treatment provider. Therefore, no impacts would result.

CEQA Appendix G Threshold (f) – Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

The Project would be served by permitted Class I, II and/or III solid waste landfills that have sufficient capacity to meet the Project's needs. In addition, the Project includes a recycle plant to recycle excess asphalt produced at the asphalt plant and stockpiled returned concrete. The Project would also recycle concrete and asphalt pavement from off-site construction demolition or road rebuilding sites. Therefore, the Project would minimize the generation of waste both on-site and off-site and no impacts would result.

CEQA Appendix G Threshold (g) – Would the project comply with federal, state, and local statutes and regulations related to solid waste?

The Project would comply with Federal, State and local solid waste statutes and regulations. Therefore, no impacts would result.

1.8 Potentially Significant Issues Analyzed in the Draft EIR

The following environmental issues have been identified as areas where the Project could result in a significant impact and were therefore evaluated in the DEIR. The DEIR section number of each is identified in parentheses.

- Aesthetics (3.1)
- Agriculture and Forestry Resources (3.2)
- Air Quality (3.3)
- Biological Resources (3.4)
- Cultural Resources (3.5)
- Geology and Soils (3.6)
- Greenhouse Gases/Climate Change (3.7)
- Hazards and Hazardous Materials (3.8)
- Hydrology and Water Quality (3.9)
- Land Use and Planning (3.10)
- Noise (3.11)
- Transportation and Traffic (3.12)

1.9 Summary of Project Alternatives

The CEQA Guidelines state that an EIR shall describe and analyze a range of reasonable alternatives to the proposed project. The guiding principles for the selection of alternatives for analysis in an EIR are provided in the CEQA Guidelines Section 15126.6. Pursuant to Section 15126.6(a),

“An EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible.”

The CEQA Guidelines Section 15126.6(f)(1) allows the following factors to be taken into consideration when evaluating the feasibility of the alternatives:

- Site suitability;
- Economic viability;
- Availability of infrastructure;
- General Plan consistency;
- Other plan or regulatory limitations;
- Jurisdictional boundaries;
- Whether the proponent can reasonably acquire, control or otherwise have access to the alternative site.

Only locations that would avoid or substantially lessen any of the significant effects of the project need to be considered. (CEQA Guidelines Section 15126.6(f)(2)(A).)

The focus and definition of alternatives evaluated in this DEIR is governed by the “rule of reason,” which requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. (CEQA Guidelines Section 15126.6 (f).)

A summary of the proposed alternatives to the Project is provided below. Each alternative is discussed in detail as it relates to a particular environmental issue in Section 3.0, Environmental Impact Analysis, and summarized in Section 4.0, Alternatives to the Project.

1.9.1 Alternative 1 - No Project Alternative

The discussion and evaluation of a No Project (No Development) Alternative is required by the CEQA Guidelines. This alternative provides a comparison between the environmental impacts of the Project

contrasted with the environmental impacts if the Project were not proposed and the existing uses of the Project site remained.

1.9.2 Alternative 2 - Reduced Annual Production Alternative

This alternative was considered to determine if limiting production would avoid or lessen any potentially significant impacts of the Project. Under this alternative, annual sales would be limited to 1.0 million tons as compared to the 1.25 million tons proposed under the Project. The Reduced Annual Production Alternative would reduce annual production by 20%, thereby extending the life of the mining operation by 20% from 75 years to 90 years in order to recover all the resources.

1.9.3 Alternative 3 - Reduced Project Size Alternative

This alternative is considered in order to reduce potential impacts to the biological resources along the Kings River and to create a larger buffer between the proposed mining operations and homes to the east across Riverbend Avenue. This alternative would include the following:

- The proposed 50-foot setback from the existing riparian habitat would be increased by 100-feet to a 150-foot setback along the Kings River. The additional habitat buffer area would amount to approximately 25 acres.
- The 100-foot setback from Riverbend Avenue would be increased by 100 feet to a 200-foot setback. The additional setback from the road would amount to approximately 15 acres.
- This alternative would reduce the available aggregate reserves by approximately 5 million tons or by 6.5 percent and the lifespan of the Project by approximately 5 years.

1.9.4 Alternative 4 - Reduced Mining Depth Alternative

This alternative was considered to determine if reducing the mining depth would avoid or lessen any potentially significant impacts of the Project. Under the Reduced Mining Depth Alternative, the Project acreage would remain the same but the maximum depth of mining would be 50 feet below ground surface (bgs) as opposed to 100 feet bgs as proposed in the Project.

Under this alternative, the following changes to the Project would occur:

- The Project footprint would remain the same. However, since an average 20 feet of topsoil and overburden overlays the aggregate resource, reducing the mining depth to 50 feet from the proposed 100 feet would only provide 30 feet of aggregate material instead of 80 feet. Therefore, potential finished product would be reduced by up to 42 million tons, from 70 MMtons to 28 MMtons, or by up to 60 percent.
- The duration of mining and processing activities would be reduced from approximately 75 years to approximately 30 years as less material would be available for mining.
- Since there would be less mining depth to fill the mined land, the area reclaimed to farmland would be increased by about 104 acres (Phases 2B, 5 and 7A) or an increase of about 39%.

- The surface area of reclaimed open water habitat would be reduced by about 93 acres, thereby reducing annual surface water evaporation by approximately 30%.
- The reduced mining depth may make it cost-prohibitive to mine with an electric dragline and require mining with a diesel excavator. Use of an excavator would require dewatering, which could create impacts to groundwater depths in the surrounding area.
- Annual groundwater use for processing would remain the same but long-term use would be reduced by approximately 45 years.

1.9.5 Alternative 5 - Different Phasing

This alternative was considered to determine if modifying the phasing plan would avoid or lessen any potentially significant impacts. Under this Alternative, the Project footprint, depth of mining and duration of the Project would remain the same. However, mining would be initiated in the phases south of Goodfellow Avenue instead of north of Goodfellow Avenue as proposed in the Project.

1.10 Alternatives Eliminated from Further Consideration

The following alternatives have been eliminated from further consideration as discussed in detail in Section 4.6:

- Alternative Location;
- Alternative Mining Method ;
- Alternative Reclamation or End Use; and
- Reduced Project Duration.

1.11 Environmentally Superior Alternative

The No Project Alternative is identified as the environmentally superior alternative. However, when the No Project Alternative is the environmentally superior alternative, CEQA requires that an EIR further identify an alternative other than the No Project Alternative as the environmentally superior alternative. Accordingly, the Reduced Mining Depth Alternative is the environmentally superior alternative. Nonetheless, the Reduced Mining Depth Alternative does not meet many of the Project Objectives and does not fully utilize County and State designated mineral resources, as discussed in Section 4.7.

1.12 Scope and Organization of the Draft EIR

Sections 15122 through 15132 of the CEQA Guidelines identify the content requirements of an EIR. An EIR must include a description of the environmental and regulatory setting, an environmental impact analysis, mitigation measures, alternatives, significant and irreversible environmental changes, growth-inducing impacts, and cumulative impacts. The scope of the issues addressed in this DEIR was developed through the review of the environmental documentation and technical studies prepared for the Project, environmental documentation for nearby similar projects, and agency and public comments received during the scoping period. The DEIR is organized in the following sections:

Executive Summary

This section includes a stand-alone summary of the Project, project alternatives, evaluation of the environmental effects, mitigation measures, cumulative impacts and a table that summarizes the impacts, mitigation measures, and level of significance after mitigation.

Section 1: Introduction

This section provides a brief introductory description of the Project as well as the Project purpose, need and objectives. The CEQA process is summarized in general and also its relation to the Project. Public and agency involvement is explained, and areas of controversy and issues that need to be resolved are summarized. The environmental areas evaluated in the DEIR are identified. The need for project alternatives is discussed, and the alternatives identified for the Project are summarized. Permits and approvals that may be necessary for the Project are listed, and the organization of the DEIR is explained.

Section 2: Project Description

This section provides a detailed description of the Project, including its location, technical, and environmental characteristics. It also summarizes the design features, BMPs and environmental protection measures incorporated into the Project to minimize potential environmental impacts.

Section 3: Environmental Impact Analysis

The Project-level analysis of each topical environmental issue section (Sections 3.1 through 3.12) is organized into the following sub-sections: Introduction, Environmental Setting, Regulatory Setting, Significance Thresholds, Project Impacts and Mitigation Measures, Cumulative Impacts and Mitigation Measures, and Alternatives to Significant Effects.

Section 4: Alternatives to the Proposed Project

This section provides a summary comparison of the impacts of the Project with the identified Project alternatives. It includes the mandatory No Project Alternative, and an environmentally superior alternative.

Section 5: Other CEQA Required Analysis

This section discusses cumulative impacts, growth inducing impacts, any significant and unavoidable adverse impacts that would remain after implementation of the Project, and significant irreversible environmental changes.

Section 6: Report Preparation Resources and Organizations and Persons Consulted

This section lists the organizations which contributed to the preparation of the DEIR.

Section 7: References

This section lists the references cited in the body of the DEIR.

Section 8: Acronyms**Appendices**

- A Scoping Process
 - A-1 Scoping Report
 - A-2 Notice of Preparation
- B Applications
 - B-1 Surface Mining and Reclamation Plan – Riverbend Sand and Gravel Project, July 2014
 - B-2 Operational Statement – Riverbend Sand and Gravel Project, July 2014
- C Aesthetics
 - C-1 Visual Impact Assessment, RGP Planning & Development Services, November 2012
- D Air Quality
 - D-1 Emission Inventory and Air Quality Impact Analysis, Dudek, October 2013
 - D-2 Supplemental Health Risk Assessment, Dudek, October 2013
 - D-3 Health Risk and Odor Assessment, Dudek, October 2013
 - D-4 Significant Impact Levels (SILs) for PM₁₀ and PM_{2.5}, SJVAPCD, August 2013
 - D-5 NOx Baseline and Fair Share Emissions Calculations, Sespe, June 2014
 - D-6 Criteria Pollutant Health Effects Memo, Sespe, June 2014
- E Biological Resources
 - E-1 Biological Resources Evaluation, Buada Associates, John Stebbins, LSA, July 2013
 - E-2 Addendum to Biological Resources Evaluation, LSA, January 2014
 - E-3 Addendum to the Biological Resources Evaluation, LSA, April 2014
- F Cultural Resources
 - F-1 Cultural Resources Studies for the Riverbend Sand and Gravel Project, Applied EarthWorks, Inc., June 2012
 - F-2 Letter Report Addendum: Cultural Resources Studies, Applied EarthWorks, Inc., October 2013
- G Geology & Soils
 - G-1 Geotechnical Review of Quarry Slope Stability & Geologic Hazards, Tetra Tech BAS, August 2013
 - G-2 Geology Soils Memorandum, SLR Consulting, November 2013
 - G-3 Slope Stability Considerations Addendum to Geotechnical Review of Quarry Slope Stability & Geologic Hazards, Tetra Tech BAS, April 2014
- H Greenhouse Gases/Climate Change
 - H-1 Supplemental Greenhouse Gas Analysis - Supporting Calculations
- I Hydrology & Water Quality
 - I-1 Groundwater Conditions at the Riverbend Sand and Gravel Project, Kenneth D. Schmidt & Associates, December 2013
 - I-2 Water Supply Assessment for the Riverbend Sand and Gravel Project, Kenneth D. Schmidt & Associates, October 2012
 - I-3 Hydrology Memorandum, SLR Consulting, October, 2013
 - I-4 Riverbend Surface Water and Drainage Plan, Chang Consultants, August 2013

- I-5 Riverbend Sand and Gravel Hydraulic Flood Analysis, Chang Consultants, February 2014
- I-6 Letter Addendum to Groundwater Conditions at the Riverbend Sand and Gravel Project, Kenneth D. Schmidt & Associates, May 2014
- J Noise & Vibration
 - J-1 Environmental Noise Assessment, Bollard Acoustical Consultants, April 2014
 - J-2 Letter Addendum to Environmental Noise Assessment, Bollard Acoustical Consultants, May 2014
- K Transportation & Traffic
 - K-1 Traffic Impact Study Report, VRPA Technologies, July 2014
- L Mitigation Monitoring and Reporting Plan

2.0 PROJECT DESCRIPTION

2.1 Project Overview

In January 2013, Riverbend Sand and Gravel submitted an application to the County for a CUP permit and a Surface Mining and Reclamation Plan for an aggregate mine and related processing plants. The mining operations would be typical of sand and gravel wet mining operations. Riverbend Sand and Gravel would be the mine operator. It is expected that approximately 90 million tons of sand and gravel would be extracted over the 75 year life of the Project. Approximately 70 million tons of finished material would be transported off-site for use in construction projects throughout the region.

The Project is located within unincorporated Fresno County in the easterly portion of the San Joaquin Valley. The City of Reedley is located approximately 5.75 miles to the southeast and the City of Sanger is approximately 1.5 miles to the northwest. The Project site encompasses 619 acres of an 833-acre parcel adjacent to the Kings River. The remaining 214 acres of the parcel, including the entire existing riparian habitat along the Kings River, are excluded from the Project and are not part of the Project site. The Project site is currently occupied by orchards and vineyards.

Surrounding land use includes an aggregate mining operation with a ready-mix concrete plant to the north (Central Valley Ready-Mix, CUP 2203) and an aggregate mining operation, to include a ready-mix concrete plant, to the east and southeast (Calaveras Materials Inc., CUP 3052). Irrigated cropland with scattered farm residences are located to the east and to the west and south across the Kings River. Stone fruit orchards with several farm residences are located on the northwest corner of Goodfellow Avenue and Riverbend Avenue between the northern and southern parts of the Project Site.

The Project site would be mined in 15 sequential phases, which would allow reclamation to be initiated as mining phases are completed. It would also allow farming to be continued on all phases not yet being mined. Soils and overburden would be removed and stockpiled for use during reclamation. Aggregate would be excavated by an electric-powered dragline to a maximum depth of approximately 100 feet below natural ground surface. Blasting and dewatering of the excavation would not be required. Aggregate would be transported to an on-site processing plant, or potentially during later phases of the Project to an adjacent off-site facility. An asphalt hot mix plant (HMA) plant, a Ready-Mix Concrete (RMC) plant, and a portable concrete and asphalt recycle plant are also included in the Project. Reclamation of the Project site would create approximately 268 acres of reclaimed farmland and approximately 351 acres of open space, namely riparian and open water wildlife habitat.

The major components of the operation include:

- Open-pit surface mines;
- Aggregate processing plant;
- RMC batch plant;
- HMA plant;

- Asphalt and concrete recycling plant;
- Product stockpiles;
- Ancillary mining and processing equipment, as well as sales/distribution equipment;
- Storage, maintenance, and administrative facilities;
- Various site improvements for access, safety, and other requirements; and
- Reclamation to farmland or open water and riparian habitat.

Other than field screening and crushing, all material processing operations, including the aggregate processing plant, HMA plant, RMC plant, and portable concrete and asphalt recycle plant, would take place at the 53-acre Plant site. The Mine Plan (Figure 2-7) shows the location of the Plant site and Figure 2-11 provides a conceptual layout of the Plant Site.

The key objectives of the Project as discussed in Section 1.1.2 include the following:

1. Provide a reliable and sustainable, local source of high quality aggregate to help meet the current and long-term demand (75 years) for construction materials in Fresno County.
2. Create an additional, long-term supply of local aggregate reserves
3. Utilize aggregate reserves from property already designated by the State and County as MRZ-2 (Mineral Resource Zone containing mineral resources of regional significance, i.e. sand and gravel).
4. Utilize high quality aggregate resources that meet the California Department of Transportation's stringent specifications for use in Portland cement concrete (PCC) and asphalt concrete (AC).
5. Provide an additional local source of construction aggregate with enough annual sales capacity (1.25 million tons) to encourage a healthy competitive market.
6. Obtain aggregate resources with access to an efficient local road network and State Highway system.
7. Create a project that would not require dewatering of groundwater.
8. Create an environmentally sound project that would balance the recovery of the aggregate resource with the protection of other resources including wildlife habitat, groundwater, surface water, and air quality.
9. Create a project that would return a significant amount of mined land back to farming.
10. Create local quality jobs, while also benefiting local downstream businesses and creating enhanced tax revenue to the County.

The following sections provide detailed descriptions of the Project location and setting, the mining operations, the 15 phases of the concurrent mining and reclamation activities and the Reclamation Plan. A detailed description of the Project purpose and need is provided in Section 1.1 of the Introduction.

2.2 Environmental Setting

A summary of the existing regional/vicinity and Project site environmental setting is provided below. Detailed descriptions of the existing Project site conditions for each of the potentially affected resource areas evaluated in the DEIR are provided in Section 3.0.

2.2.1 Regional and Vicinity Setting

The Project area is located on the eastern margin of the San Joaquin Valley and is characterized by a broad plain consisting of large coalescing alluvial fans. Numerous rivers and streams, such as the Kings River and the San Joaquin River, originating in the higher elevations of the Sierra Nevada, flow into the Central Valley, depositing alluvial sediments. The Kings River, located along the western boundary of the Project site, is the predominant surface water feature in the vicinity. The Kings River is geomorphologically similar to the San Joaquin River, except that it has a broader floodplain and a thicker section of recent sand and gravel. No materials deleterious to the production of quality aggregate have been found in the Kings River deposits. (DOC and DMG, 1986)

The region is hot and dry in summer with long, sunny days. Winters are moist and often blanketed with heavy fog. The valley is ringed by the Diablo and Coast Ranges on the west and the Sierra Nevada foothills on the east. This climate has made the region well suited for farming, resulting in the San Joaquin Valley becoming California's major agricultural region, producing a wide variety of fruits and vegetables. The growth of agriculture in the Central Valley has converted much of the historical native vegetation to farmland.

2.2.2 Project Site Setting

The Project site is located approximately 1.5 miles southeast of the City of Sanger between the Kings River and Riverbend Avenue and includes portions of Sections 25 and 36 of T14S/R22E, Section 1 of T15S/R22E, and Sections 19, 30 and 31 of T14S/R23E. The Project site includes approximately 619 acres of an approximately 833 acre property adjacent to the Kings River. The remaining 214 acres, including all riparian habitats along the river, a valley oak grove, and areas of potential cultural significance, are excluded from the Project site. The location of the Project site is shown in Figure 2-1 Regional Location Map and Figure 2-2 Site Location Map.

The Project site is primarily flat and is dominated by grape vineyards and orchards. The western edge of the Project site is bordered by riparian vegetation along the Kings River and two former gravel excavation ponds to the northwest. There is an existing mining operation with a ready-mix concrete plant to the north and another mining operation to the east and southeast. Irrigated cropland with scattered farm residences are located north, south and east of the Project site, and also across the Kings River to the west and south. Figure 2-3 Vicinity Map/Land Use provides an aerial photo of the Project site with the current land uses identified.

Figures 2-4 to 2-6 Existing Conditions provide photographs of the existing surface conditions. As can be seen from the photographs, most of the Project site surface area is covered with cobbles and/or a fine sandy loam. The rocky soil conditions limit the type and amount of agriculture on the Project site to orchards and vineyards.

Based on Project site investigations, relatively coarse-grained deposits of the ancestral Kings River are generally predominate in subsurface areas above a depth of approximately 200 feet. Groundwater flows toward the south, parallel with the Kings River and, as of June 2012, depth to water ranged between approximately 15 and 20 feet.

The Project site is within the Kings River Water District. Water service is provided by four on-site domestic wells and four active irrigation wells. A manmade irrigation ditch, the Hanke ditch, runs through the eastern portion of the Project site. The ditch consists of an underground pipe north of Goodfellow Avenue and an open ditch south of Goodfellow Avenue. Approximately 95% of the current water used at the Project site for irrigation comes from the Hanke ditch. The ditch runs into the Kings River approximately one-half mile southeast of the Project site. Current consumptive water use for irrigation is estimated to be 1,630 acre-feet per year.

The Federal Emergency Management Agency (FEMA) mapped the 100-year floodway and regulatory floodplain for the Project area in the late 1970s. FEMA's Flood Insurance Rate Maps (FIRMs) covering the Project site are Map Numbers 06019C2160H and 06019C2170H. The "regulatory" floodway is the area within the "regulatory" floodplain that must be reserved in order to convey the 100-year flow without cumulatively increasing the 100-year water surface elevation by more than a foot. In addition, in 1971, the State of California, through the Central Valley Flood Protection Board (CVFPB), delineated and mapped the "designated" floodway for the Project area. The Designated Floodway is defined as the channel of the stream and that portion of the adjoining floodplain reasonably required to provide for the passage of a design flood, as indicated by floodway encroachment lines on an adopted map.

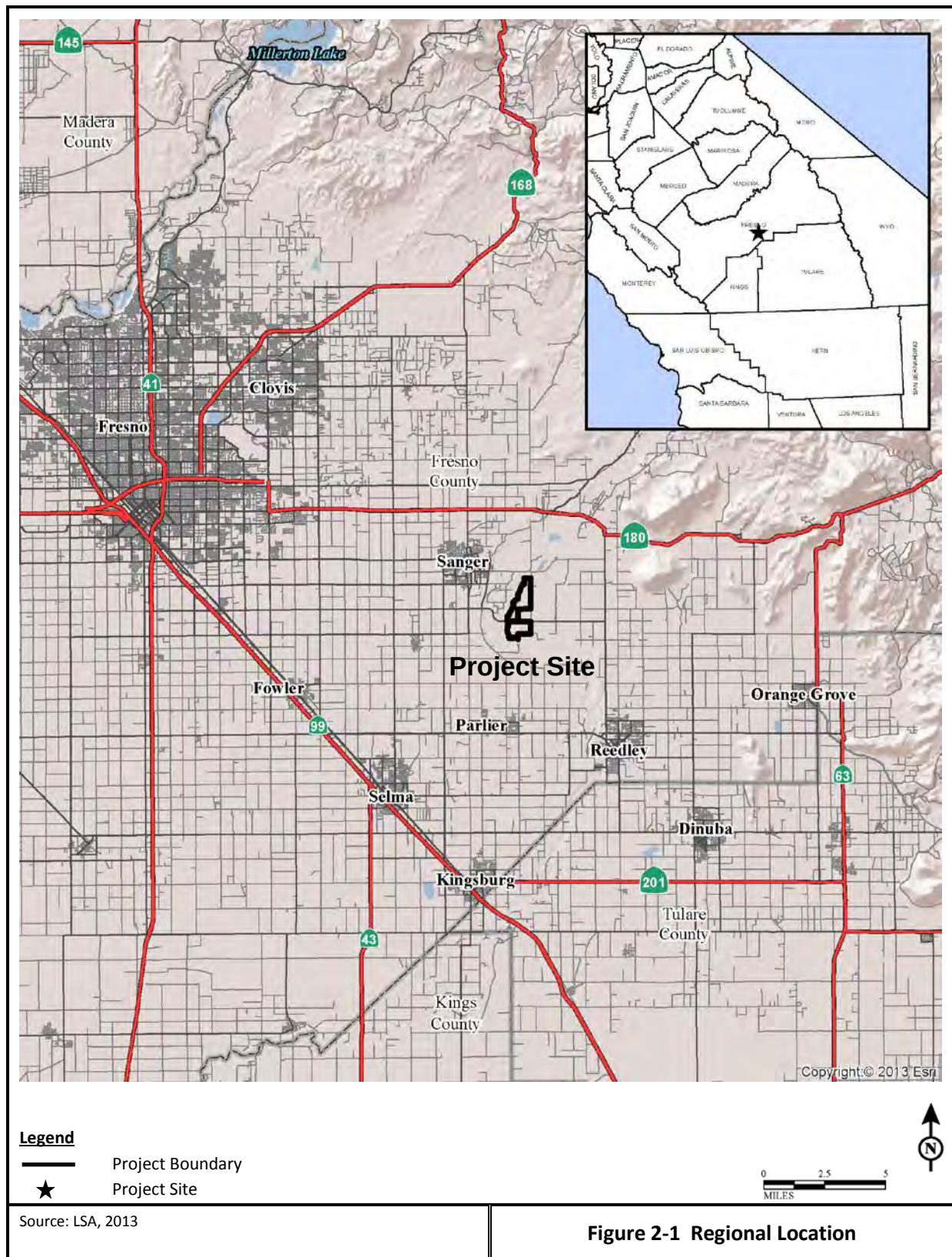
Since the prior floodplain studies by FEMA and CVFPB were performed in the 1970s, it is likely that some of the physical changes that have occurred along the natural river corridor since then may have altered the floodplain. Therefore, an updated Hydraulic Flood Analysis (Chang, January 2014) was conducted using recent topographic mapping for the Project site and is provided in Appendix I. The results of the updated existing condition analysis indicate that the current floodplain on the Project site is significantly different than the mapped FEMA FIRM floodplain in several areas. Therefore, the updated existing conditions analysis serves as the appropriate baseline for the Project site. It was determined that the Project site is set back a minimum of 50-feet from the regulated and designated floodways.

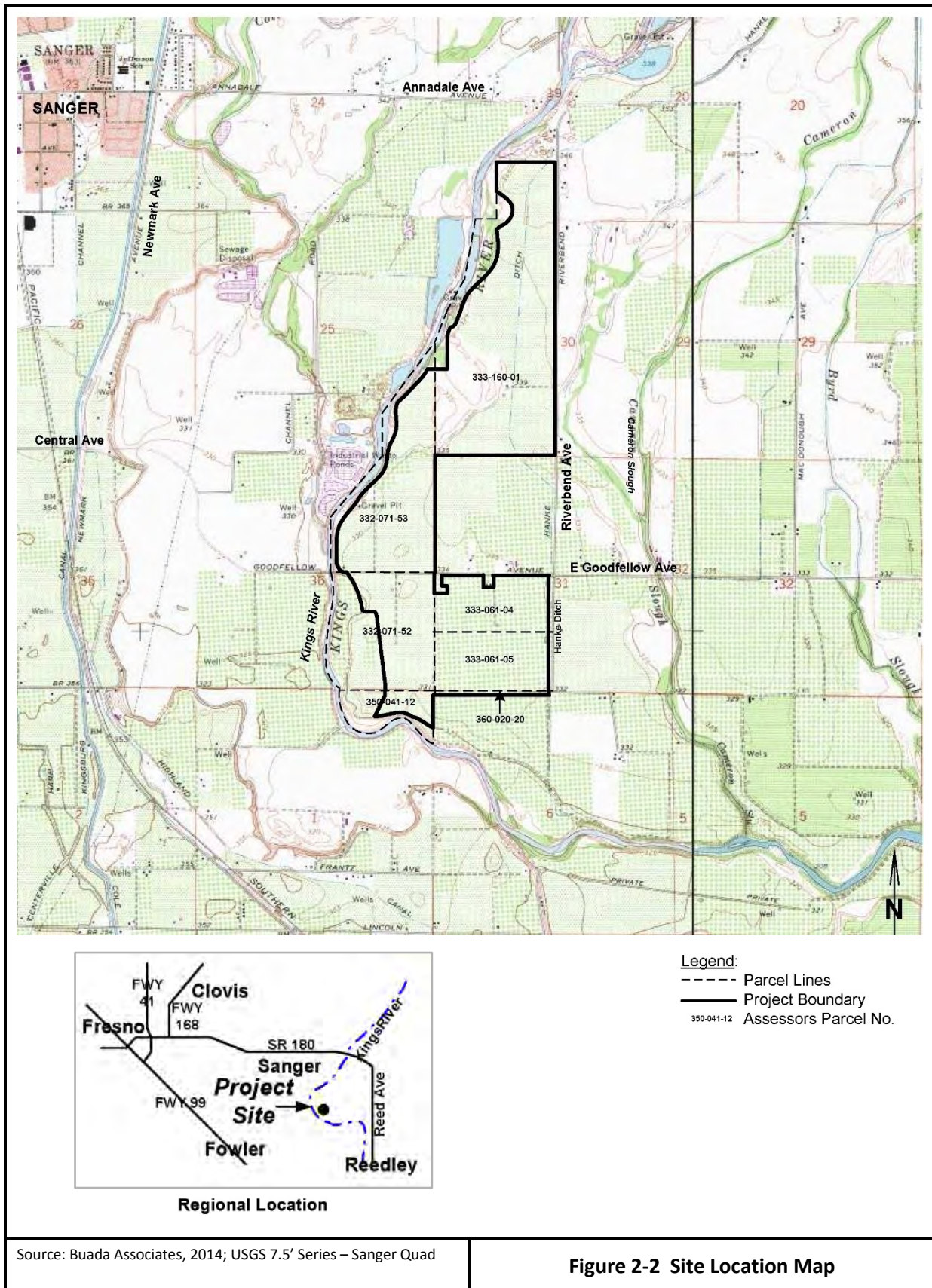
The Project area is classified by the State of California as a Mineral Resource Zone 2 (MRZ-2) Areas classified as MRZ-2 are those where significant mineral deposits are present or where it is judged that there is a high likelihood for their presence. Fresno County incorporated the MRZ-2 classification into the Mineral Resources Unit of its General Plan. The State also designated the Project site as having construction grade aggregate deposits that are of regional significance.

The existing zoning designation of the Project site is Limited Agriculture (AL-20). Surface mining operations and related facilities and activities are permitted in the AL-20 zone district, subject to approval of a CUP. Approximately 88 acres of the Project site (Phases 8A & 8B Figure 2-7) are subject to Williamson Act contract 6322. At least 10 years prior to the scheduled mining of Phases 8A and 8B, a Notice of Non-renewal would be filed with Fresno County which will cause the contract to expire prior to the mining of those phases.

Of the Project site's 619 acres, approximately 618 acres are mapped Important Farmland by the Farmland Mapping and Monitoring Program (FMMP). These agricultural areas have been intensely farmed for decades and no natural habitat remains, with the exception of a small grove of mature Valley Oaks (located just west of the middle of Phase 5). Because of this, wildlife use of the Project site is relatively low. However, there are a variety of species known to occur in disturbed and agricultural settings. The riparian communities associated with the Kings River provide the only quality wildlife habitat near the Project site. As discussed in the biological resource section of the DEIR, there are several special status species that have the potential to occur on or near the Project site. These include, but are not limited to, the Valley Elderberry Longhorn Beetle, Sanford's Arrowhead, Swainson's Hawk, Tricolored Blackbird, and San Joaquin Kit Fox.

Based on the cultural resources study prepared for the Project site, there are prehistoric archaeological sites or features near but not within the Project site. A nearby area of potential cultural significance was specifically excluded from the Project site.







Source: Buada Associates, 2014; Google Maps 2013 (aerial)

Figure 2-3 Vicinity and Land Use Map



Photo 1. Rocky soil conditions



Photo 2. Olive orchard die-off due to rocky soil conditions

Source: Buada Associates, 2014

Figure 2-4 Existing Site Conditions (Photographs 1 and 2)



Photo 3. Vines stressed due to rocky soil conditions



Photo 4. Proximity of farming to riparian habitat along the Kings River

Source: Buada Associates, 2014

Figure 2-5 Existing Site Conditions (Photographs 3 and 4)



Photo 5. Typical view of riparian habitat between the project site and the Kings River. Project site is on the left behind the habitat.

Source: Buada Associates, 2014

Figure 2-6 Existing Site Conditions (Photograph 5)

2.3 Mine Operations

2.3.1 Mine Operations Summary

The Project consists of 15 sequential mining phases for construction grade aggregate (sand and gravel). Farming would continue on all phases not being mined and reclamation would be initiated after a mining phase is completed. A wet mining method would be used which utilizes an electric dragline to excavate aggregate from beneath the groundwater. Mining depths would vary, but should not exceed approximately 100 feet below natural ground surface. Blasting and dewatering of the excavation would not be required. The mining operation would be set back 100 feet from the top of the Kings River bank and 50 feet from the drip line of the riparian areas along the river.

The mined aggregate would be processed at an on-site processing plant with an anticipated annual process rate of 1.6 million tons, the approximate amount needed to produce 1.25 million tons of finished product. The finished product would be sent off-site for use in regional construction projects or used by an on-site RMC plant or HMA plant. The processing facility, including all of the plants described in Section 2.1, would also include periodic use of a portable plant to recycle up to 125,000 tpy of concrete and asphalt debris. Operations are anticipated to ramp-up over a five year period, and are expected to be on-going for at least 75 years.

Table 2-1 provides an overview of the Project and Figure 2-7 shows a schematic of the mine plan and includes the anticipated schedule for the mining and reclamation phases. Section 2.4 provides a detailed description of the Reclamation Plan.

Table 2-1. Riverbend Mining and Reclamation Plan Summary

Item/Activity	Description ¹
Property	Approximately 833 acres
Mining Acres (Project Site)	Approximately 619 acres
Mining Method	Topsoil and overburden removal by scrapers. Wet mining of aggregate by electric dragline. Explosives would not be used.
Mining Depth	Approximately 100 feet below natural ground surface level.
Processing	Aggregate processing plant, hot mix asphalt plant, ready-mix concrete plant, portable plant to recycle concrete and asphalt debris (including imported).
Estimate Aggregate Volume	90 million tons
Estimated Total Sales	70 million tons
Annual Processed Volume	1.6 million tons
Annual Sales Volume	1.25 million tons

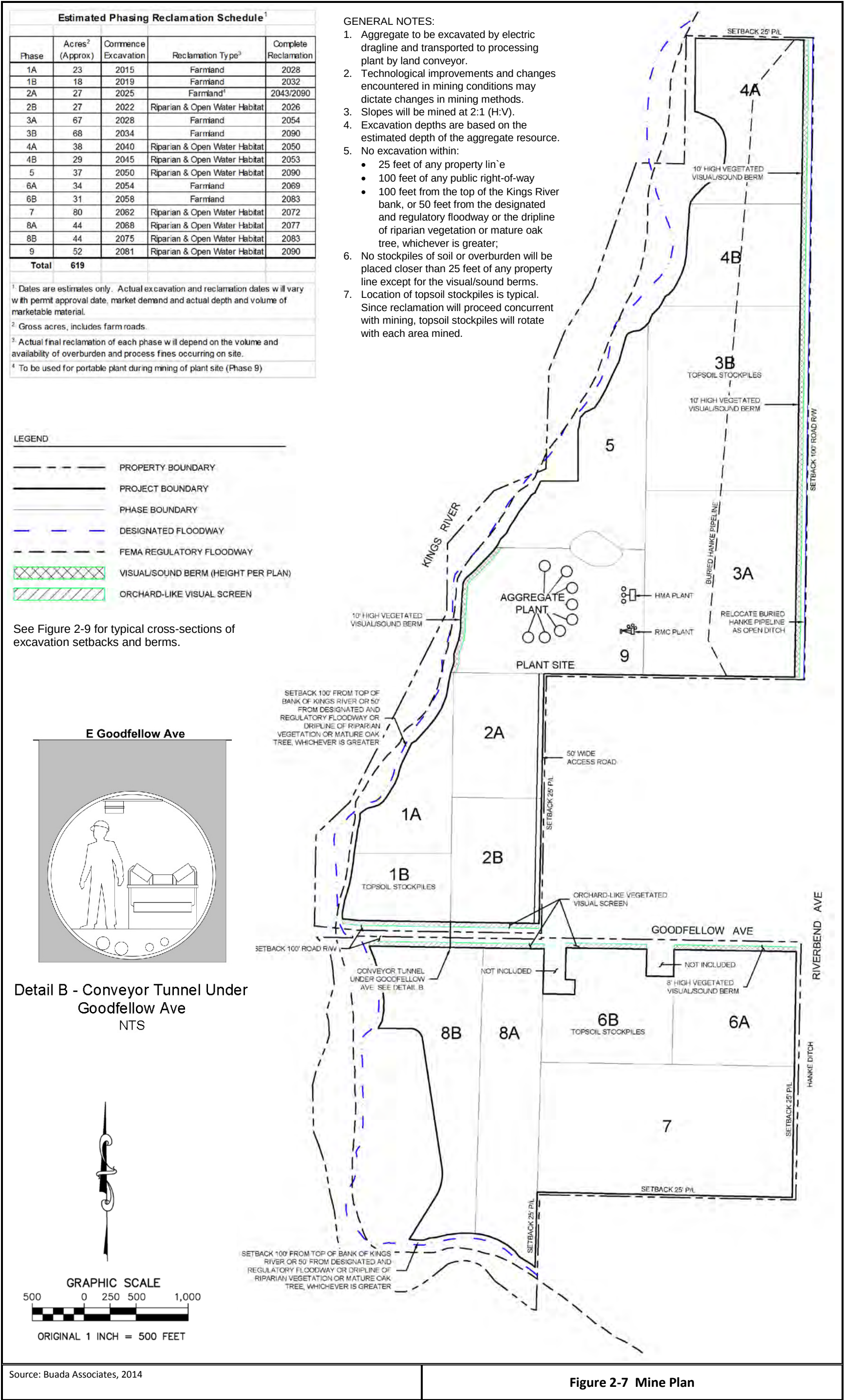
Item/Activity	Description ¹
Estimated Annual Sales Per Plant ²	
Aggregate	765,000 Tons
Hot Mix Asphalt	250,000 Tons
Ready-Mix Concrete	150,000 Cubic Yards
Concrete and Asphalt Recycling	125,000 Tons (25,000 tons asphalt and 100,000 tons concrete)
Depth to Groundwater	15 to 20 feet below natural ground surface level
Reclamation End Uses	
Reclaimed Farmland ³	Approximately 268 acres
Open Space, Riparian and Open Water Habitat ³	Approximately 351 acres
Project Life	Approximately 75 years

¹. Values are approximate except for total production of 1.25 million tpy.

². Typical mix of products. Actual sales mix would vary based on demand. The requested total annual sale of aggregate products is 1.25 million tons.

³. Actual final reclamation and areal extent of each end use would depend on the volume and availability of overburden and process fines suitable for use as fill occurring on site.

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2.3.2 Commencement of Operations and Employment

Operations would begin immediately upon approval of the CUP and the Surface Mining and Reclamation Plan; acceptance of Financial Assurances; and all other necessary approvals (see Section 1.5).

Project site preparation and installation of utilities and road infrastructure would precede excavation and construction of the Plant site. Those preparatory activities are described in Section 2.3.8.

The number of employees would fluctuate with seasonal demand. The average number of employees during peak seasons would be approximately 38.

2.3.3 Hours of Operation

Aggregate operations are proposed to occur five days a week for approximately 250 days a year. The RMC and HMA plant operations are proposed to operate six days a week for approximately 275 days a year (partial days on Saturdays). Typical operating hours are shown on Table 2-2. However, mining and processing hours, including nighttime hours, may vary to better utilize electricity during off-peak hours. There may also be occasions, such as when supporting a major public roads project, when trucks may be loaded during nighttime hours or on weekends to avoid traffic conflicts. In addition, if necessary, asphaltic oil, cement and other supplies may be delivered during nighttime hours.

Table 2-2. Typical Hours and Days of Operation

Activity	Proposed Hours ^{1,2}
Excavation and Aggregate Processing	7:00 am - 7:00 pm, Weekdays
Loading and Aggregate Trucking ³	6:00 am - 9:00 pm, Weekdays
Asphalt and Ready-Mixed Concrete Plants ⁴	4:00 am - 6:00 pm, Weekdays, May – Oct. 5:30 am - 6:00 pm, Weekdays, Nov. – Apr. 7:00 am - 2:00 pm, Saturdays

¹ Maintenance of mobile and plant equipment extend beyond these hours.

² Hours can be extended during periods of public emergency and/or for major public road projects affecting the health and safety of the community.

³ Major public road projects may be required to be completed during night hours or on weekends to avoid traffic conflicts. Such projects may require loading operations beyond the hours and days of operation shown.

⁴ Asphaltic oil, cement and other supplies may be delivered during nighttime hours.

2.3.4 Estimated Production and Duration of Mining

It has been determined through geotechnical analysis that approximately 90 million tons of economically viable aggregate material exist on the Project site. Total production depends on market conditions, environmental conditions/weather, and the terms of the permit(s); however, it is estimated that initial mining of the first full year of operations would extract less than 500,000 tons of aggregate material. At peak annual processing rates of approximately 1.6 million tons, aggregate products sales are expected to reach approximately 1.25 million tons after about five years of operation.

Table 2-3 describes each plant's estimated peak production rates for the years 2015 (i.e., the first year of production) and 2019 (i.e., all plants are at full production levels and haul trucks transporting material to the aggregate plant are replaced by a conveyor system). In 2019, the aggregate plant is projected to produce 765,000 tons per year for off-site sales to customers; 237,500 tons per year of sand and aggregate as ingredients in the asphalt product; and 247,500 tons per year of sand and aggregate as ingredients in the concrete product, for an overall annual sales volume of 1,250,000 tons per year. With additional waste estimated at 22%, which would be unsuitable for aggregate sales or asphalt and concrete products, the annual processing rate would be up to 1,600,000 tons per year. The aggregate plant would process a nominal 648 tons per hour. The aggregate plant is assumed to operate up to 8 hours per day, 5 days per week, 250 days per year.

Table 2-3. Plant Production Summaries

Description/Activity	2015	2019
Total Annual Aggregate Processed	448,000 tons	1.6 million tons
Plant	Estimated Annual Tons Processed Per Plant	
Aggregate	196,250 tons	765,000 tons
Hot Mix Asphalt	71,250 tons ¹	237,500 tons ¹
Ready-Mix Concrete	82,500 tons ¹	247,500 tons ¹
(22% Waste Factor) ²	98,000 tons	350,000 tons
Net Annual Sales	350,000 tons	1.25 million tons

¹Tons of sand and aggregate as ingredients in the finished product. See Table 2-1 for total sales quantities, including concrete and asphalt recycling.

²Approximate quantity of material unsuitable for aggregate sales or asphalt and concrete products. These non-marketable processing fines would be used as a source of fill material in the mining phases that would be reclaimed to farmland.

The total estimated annual processing and sales rates for construction aggregates, ready-mix concrete, hot mix asphalt, and recycled asphalt and concrete products are also shown in Table 2-1.

2.3.5 On-Site Vehicular Circulation and Parking

Access Road and Entry

Vehicular access to the Plant site would come from Goodfellow Avenue via a new entrance to be located at the southeast corner of Phase 2A (see Figure 2-7 Mine Plan for locations of the mining phases), approximately one-half mile west of Riverbend Avenue. An on-site, asphalt-paved access road approximately one-half mile in length would be constructed from Goodfellow Avenue to the Plant site. This would serve as the single ingress and egress point for all vehicles, which includes material hauling trucks, commercial delivery trucks, and employee and visitor passenger vehicles. A security gate would be located on the access road at the boundary of the Plant site.

On-Site Parking

Vehicular parking would occur in designated parking areas. Parking would be provided for commercial delivery and service vehicles, and employee and visitor passenger vehicles. On-site parking would be provided in accordance with applicable zoning ordinance and development standards.

On-site Roads and Vehicular Circulation

Numerous types of on-road vehicles would be operating within the Project site. These include support trucks, raw material and product trucks, employee vehicles, and outside services and miscellaneous visitor vehicles. In addition, off-road vehicles would be accessing the Plant site, the active mining area, and the concurrent reclamation areas. Due to the variable nature of on-site traffic, the Project includes paved and unpaved internal roadways.

The primary access road would be an approximately one-half-mile long paved road going from Goodfellow Avenue northward to the Plant site. For the first year of Project operations, mined material would be transported to the aggregate plant by off-road trucks on an unpaved haul road. Beyond the first year, aggregate material would be transported by overland conveyors; haul trucks would only be used when the conveyors are shut down due to occasional non-routine repairs. There would also be unpaved maintenance roads in and out of the mining areas to provide access for various support trucks (e.g., service trucks, lube trucks, pickup trucks, dump trucks). The unpaved roads would be maintained by a grader and water truck.

Internal to the Plant site, the plant road would be primarily unpaved, but treated with a dust palliative and watered as necessary to minimize fugitive dust. A portion of the plant road in the vicinity of the asphalt and concrete plants would be paved for dust control and to facilitate maintenance. It is estimated that the paved portion would be 500 feet long and the unpaved portion would be about 1,000 feet long.

2.3.6 Off-Site Transport and Travel Routes**2.3.6.1 Finished Product**

Most of the finished product would be transported by haul trucks to the cities of Fresno and Clovis which are located to the west. Lesser quantities of product would be transported to the cities of Fowler, Selma and Kingsburg to the south/southwest; Sanger to the northwest; and Reedley and other locales in eastern Fresno County. Goodfellow Avenue is classified as a collector with arterial connections at Academy Avenue, McCall Avenue, and Central Avenue (west of Temperance Avenue). The truck routes and estimated distribution percentages are shown in Figure 2-8.

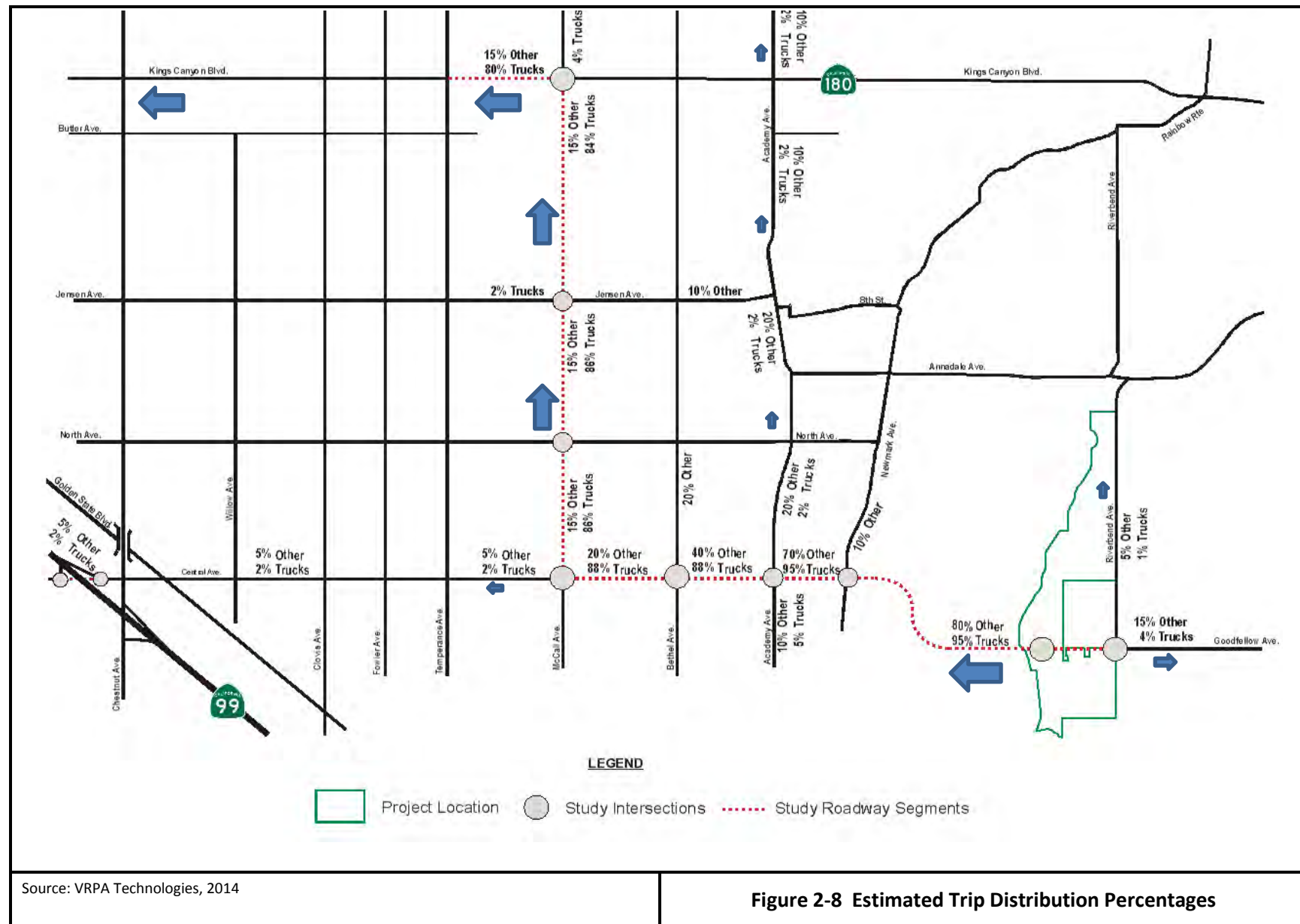


Figure 2-8 Estimated Trip Distribution Percentages

2.3.6.2 Materials Deliveries and Outside Services

Independent trucking firms would deliver Portland cement, asphaltic cement, propane, diesel fuel and construction materials to the Project site. Concrete and asphalt pavement from off-site construction demolition and road rebuilding sites would be delivered to the Project site by outside trucking firms for recycling by a portable concrete and asphalt recycle plant.

2.3.6.3 Project Trip Generation

Table 2-4 provides a breakdown of the daily vehicle trips that would be associated with each of the Project production plants at full operational capacity in 2019. The estimated trip distribution percentages are shown in Figure 2-8.

Table 2-4. Project Trip Generation Characteristics

Vehicle Type/Purpose	One-Way Trip Distance (Miles)	Maximum One-Way Trips/Day ¹
AGGREGATE PLANT		
Aggregate Product Trucks	25	266
ASPHALT PLANT		
Liquid Asphalt Trucks (Bakersfield Refinery)	140	10
Asphalt Product Trucks	25	212
CONCRETE PLANT		
Cement Trucks (Tehachapi or Calaveras Cement Plant)	145	22
Concrete Product Trucks	25	224
Import Concrete/Asphalt for Recycle	25	40
FUEL TRUCKS		
Propane Trucks (Local Supplier)	17	2
Diesel Trucks (Local Supplier)	15	2
<i>Subtotal Product Trucks</i>	--	702
<i>Subtotal Delivery Trucks</i>	--	76
Total Trucks	--	778
OTHER VEHICLES		
Employee Vehicles	14.7	76
Outside Services and Miscellaneous Visitor Vehicles	6.6	14
Total Other Vehicles	--	90
TOTAL ALL VEHICLES	--	868

Source: Operations Statement, Buada January 2013

¹ All trips are one-way trips either from an off-site location to the facility entrance, or the return trip.

2.3.7 Utilities and Support Services

Domestic Wastewater

Domestic sewage would be handled by conventional permitted septic systems and serviced as necessary by commercial septic services. The Project would not produce any industrial wastewater discharges.

Electrical Service

Electrical service would be provided by Pacific Gas and Electric (PG&E). Distribution facilities exist on Riverbend and Goodfellow Avenues, to which the Project site would connect.

Propane and Natural Gas Service

The asphalt plant dryer/burner would be fired by natural gas or propane. Propane would be delivered to the Project site in tanker trucks and stored in an approved above ground tank at the Plant site. Natural gas for the asphalt plant may be provided by PG&E and would be connected to the Project site from existing service lines.

Diesel and Gasoline Fuels

Diesel for fueling the mobile off-road equipment and gasoline for fueling plant pick-up trucks would be stored in above ground storage tanks (ASTs) located at the Plant site. The ASTs would have appropriate secondary containment and be in compliance with AST regulations and requirements.

2.3.8 Site Preparation

The pad for the 53-acre Plant site, the paved access road to the Plant site, the initial mining footprint, and the unpaved internal haul roads would be among the first site features constructed. Prior to their construction, initial Project site work would involve demolition and/or removal of residential and farm structures, irrigation piping and above ground fertilizer tanks, as well as clearing and grubbing ground vegetation, orchard trees, and vineyards. Minimal grading would be required for these areas since the existing agricultural land is already flat. Topsoil from the Plant site location and the initial mining area would be removed and stored separately for later use in reclamation. Overburden, the material directly beneath the topsoil and overlying the sand and gravel deposit, would be stockpiled and used to construct 10-foot high vegetated berm along the west boundary to attenuate noise and visually screen the Plant site from the Kings River and areas west.

When the Plant site is ready, equipment for the aggregate plant, HMA plant, and RMC plant would be brought onsite, and support buildings and parking areas would be built. At the present time, specific processing equipment, engineered plant layouts, and construction plans have not been determined.

The residential structures and associated outbuildings which would be removed at various points in the Project were built prior to 1980. Due to their age, these structures may have asbestos containing material (ACM) and/or lead based paint (LBP). The structures would not be removed until the mining phase is reached that involves the location of the structures. Prior to removing the structures, ACM and

LBP surveys would be performed and the demolition activities would be conducted in accordance with ACM and LBP regulations and requirements.

2.3.9 Water Management

2.3.9.1 Surface Runoff and Drainage Plan

The Project site has been designed to address surface runoff and drainage within the overall mining and reclamation area boundaries. A Surface Runoff and Drainage Plan (Appendix I) has been prepared to account for stormwater runoff conveyance through the Project site. Best Management Practices (BMPs) for stormwater management and erosion protection as well as stormwater monitoring would be provided in the Project site-specific Storm Water Pollution Prevention Plan (SWPPP).

During the active mining period, the majority of the un-mined area within the Project site would continue to be used as farmland. Because there are differing regulations governing farmland runoff versus construction and industrial runoff, a primary component of the drainage plan is to prevent mixing or commingling of farmland runoff with runoff from active mining areas and mining operations.

Drainage Concept Summary

Schematic exhibits of the drainage pattern are provided in the Surface Runoff and Drainage Plan. The overall approach for managing stormwater runoff for the Project is summarized below:

- Stormwater runoff from existing farmland upslope of the proposed mining phases would be conveyed in separate swales to avoid commingling with active Project area runoff.
- Farmland runoff that does not yet pass through active Project areas would continue to drain along existing drainage patterns.
- Stormwater runoff from the processing Plant site would be captured by a retention basin and recycled within the processing Plant site.
- Direct precipitation within active mining phases and on their 3-foot high perimeter safety berms would be retained within the pits. The safety berms would provide additional isolation of mining area runoff from farmland runoff.
- The existing and proposed areas east and west of the proposed north-south plant access road would not contribute runoff to the road. Stormwater runoff west of the future access road flows in a westerly direction under current conditions. Ultimately, this west area will contain the Phase 2A and 2B mining pits, which will retain all of their runoff. Stormwater runoff east of the access road is beyond the project boundary and flows in a southerly direction. Therefore, the area east of the road will not contribute runoff to the road. Runoff on the 50-foot wide road would be contained within the road and conveyed south to Goodfellow Avenue. Roadway runoff would be treated in accordance with the SWPPP. The existing ground surface along the proposed site access road generally slopes in a southerly direction towards Goodfellow Avenue. The road will generally maintain the current ground slope and will either be constructed with an

inverted crown or with asphalt berms along each edge. This will confine stormwater runoff within the road and convey the runoff south towards Goodfellow Avenue.

- Stormwater runoff in mining haul roads would be conveyed within the inverted roadway section or in edge swales separated from the farmland runoff swales. Roadway runoff would be treated in accordance with the SWPPP.
- Post-reclamation stormwater runoff would either be captured by the open water ponds resulting from the mining pits (i.e. direct precipitation within the ponds and pond banks) or revert to current conditions in the backfill areas. Runoff from backfill areas that are reused as farmland would not be allowed to commingle with the open water ponds.

Drainage from Farmlands

Under current conditions, the majority of the Project area supports farmland activities primarily consisting of row crops and orchards. Stormwater runoff from existing farmland primarily occurs as sheet flow over the natural, gently-sloping ground surface. The runoff is directed in a westerly and southerly direction to the adjacent Kings River. Topographic mapping indicates that some surface depressions exist in the nearly level ground surface, which can pond and hold water until it infiltrates or evaporates. Some larger ponds also exist near the northwest corner of the Project site that may capture stormwater runoff before it reaches the Kings River. The only significant improved conveyance facilities in the vicinity are the Hanke ditch and pipeline, which flow in a southerly direction along the easterly portion of the Project site; however, the Hanke Ditch may only capture minor, localized amounts of the Project site runoff.

During mining, stormwater runoff in the un-mined farmland would continue to sheet flow as it does under current conditions. As the sheet flow approaches a mining pit, it would be prohibited from entering the pit by 3-foot high earthen safety berms that surround each pit. The sheet flow would be conveyed around the perimeter of a mining pit by a drainage swale adjacent to and outside the safety berms that is capable of conveying the 20-year flow where it would then reconnect to stormwater runoff from the surrounding farmland. As a mining pit expands within a given phase, the safety berms and swales shall be relocated as necessary to conform to the expansion. A minimum 30-foot wide buffer would exist between adjacent mining phases when the ultimate mining footprint is reached. The buffer would accommodate the safety berms and swale. This system is intended to separate the farmland runoff from the mining runoff and avoid the potential for intermingling.

After reclamation, some of the pits would be backfilled approximately to the original ground elevation, and would be able to again support farmland operations. The backfilled areas would generally recreate the original sheet flow patterns. Some minor drainage improvements to manage the runoff would be constructed, as needed.

Drainage from Aggregate Processing Plant Site

The aggregate processing Plant site would occupy the final Phase 9 area until the last stage of the Project, when the processing facilities are moved and mining is conducted in that phase. The Plant site would be graded to direct runoff from the processing plant to a retention basin within the Plant site to prevent discharge beyond the Plant site. The stored water would be recycled on-site for aggregate processing, dust control and/or for production of ready-mix concrete. The retention basin would be sized to capture the volume resulting from a 20-year, 1-hour storm event with at least a foot of freeboard, as specifically discussed below.

Drainage from Mine Phases

Once established, each mine phase within its perimeter safety berm (approximately 3-foot high) would drain internally. Precipitation that falls within the footprint of a mining area and inner slope of its safety berm would flow directly into the excavated pit. In addition, runoff that falls on the outer slope of the safety berm would be contained within a small swale around the perimeter of the berm and directed back into the active mining cell through pipes. Information regarding the pipe sizes, pipe spacing, and energy dissipation measures is provided in the Surface Runoff and Drainage Plan. The purpose of this configuration is to internally contain all stormwater falling within the outer perimeter of each developed mine phase, including stormwater in the swales serving the safety berms.

Once the mining extends below the groundwater level, the pit would contain open water. The stormwater would either infiltrate to, or blend with, the groundwater depending on the pit depth. Since each pit would be lower than the existing perimeter ground surface and be surrounded by an approximately 3-foot high safety berm, precipitation and runoff within the pit would not contact runoff outside the pit and its safety berm.

Drainage from Project Roads

The primary site access road would be aligned in a north-south direction along the easterly side of Phases 2A and 2B and connect the processing plant with Goodfellow Avenue. Stormwater runoff west of the future access road flows in a westerly direction under current conditions. Ultimately, this west area would contain the Phase 2A and 2B mining pits, which would retain all of their runoff. Therefore, the area west of the road would not contribute any significant runoff to the road. Stormwater runoff east of the access road is beyond the Project site and flows in a southerly direction. Therefore, the area east of the access road would not contribute runoff to the access road.

The existing ground surface along the proposed Project site access road generally slopes in a southerly direction towards Goodfellow Avenue. The road would generally maintain the current ground slope, be 50-feet wide, and would either be constructed with an inverted crown or with asphalt berms along each edge. This would confine stormwater runoff within the road and convey the runoff towards Goodfellow Avenue. Runoff from the access road would be managed using appropriate BMPs and would be sampled and monitored in accordance with the applicable SWPPP before being allowed to discharge off-site. Runoff that satisfies the sampling thresholds would be allowed to continue off-site.

Additional Project haul roads include internal roads between the processing area and mine phases being actively mined or reclaimed. These roads would have traffic from haul trucks, mining equipment, and maintenance vehicles. Stormwater runoff from these roads would be contained within swales that would be constructed either along the edges of the roads, or within the center of the roads for roads with an inverted crown. The road cross-section should direct all road runoff to the centerline or edge swale (at a 2 percent cross-slope). In either configuration, the swales conveying runoff from the roads would be separate from the irrigation runoff swales and mining swales up to the downstream point at which the swale passes beyond mining activities. Runoff from the haul roads would be managed using appropriate BMPs (e.g., gravel bag or rock check dams along drainage swales, silt fencing or fiber rolls to contain drainage and sediment, lined swales, etc.) and would be sampled and monitored in accordance with the SWPPP.

Beyond the sampling point, the haul road runoff meeting sampling thresholds would be allowed to combine with the agricultural runoff, and be conveyed through the Project site in a westerly and southerly direction, as under current Project site conditions.

Management of runoff from existing roads within the Project site that are used exclusively for farmland purposes would not be modified as a component of the Project until mining encroaches upon them, and is, therefore, not a part of this drainage plan.

Drainage from Reclaimed Sites

After mining is completed, mine phases that have been reclaimed as ponds would continue to drain internally, safety berms and their associated drainage facilities would be maintained, and the pits would retain all precipitation that falls on those areas. Mining pits that are backfilled and reclaimed as farmland would generally follow pre-mining drainage patterns. Drainage swales to convey farmland runoff past the reclaimed ponds would be retained or created, where needed. Once the Project site is reclaimed, roads would be used for farmland purposes only, and no mine-related road runoff would occur or require management or monitoring under mining SWPPP requirements.

2.3.9.2 Groundwater Quality

Groundwater quality protection is achieved by the implementation of the Project design features, protection measures and BMPs associated with the mining and farming operations. These are discussed in Section 3.9 and summarized in Section 2.3.17. The Project would not entail use of settling basins or underground storage tanks. If an abandoned underground storage tank is discovered, it would be removed in accordance with the appropriate regulations and requirements. The water and silt materials from process slurry would be segregated onsite. Water segregated from the slurry would be recirculated back into the plant, and silt materials would be placed as backfill in areas where mining has been completed. The water and silt from the process slurry would be managed such that they are not contaminated with hazardous materials. All hazardous materials and waste would be managed in accordance with applicable regulations and Project specific BMPs.

2.3.9.3 Water Requirements and Consumption

Components of the Project potentially affecting the consumption of groundwater are the mining related consumptive water use and increased evaporative losses of exposed groundwater due to the creation of 318 acres of open water ponds. Surface water has been and would continue to be used for irrigation of agricultural lands at the Project site. Groundwater would be exclusively used to supply Project related mining needs. Water consumption is discussed in more detail in Section 3.9 and in the Water Supply Assessment provided in Appendix I. The Project water budget calculated by KDSA (2013) is provided in Table 2-5.

Table 2-5. Project Water Budget

Item	Baseline (AF/yr)	Mid-mining (AF/yr)	End of mining (AF/yr)	Post-Reclamation (AF/yr)
Crop Related Use				
Applied as irrigation	2,320	1,375	650	1,005
Reduction in surface water use compared to existing conditions	NA	945	1,670	1,315
Total crop consumptive use	1,630	955	450	695
Groundwater (Mining Related) Use				
Plant operations	0	180	180	0
Landscape irrigation	0	15	20	0
Pond evaporation	0	280	1,060	1,060
Riparian evapotranspiration	0	20	60	70
Total mining consumptive use	0	495	1320	1130
Combined Crop Irrigation and Mining				
Total Crop and Mining Consumptive Use (Surface water and groundwater)	1,630	1,450	1,770	1,825
Change in Overall Consumptive Use Compared to Baseline	0	(180)*	140	195
Reduction in surface water use compared to existing conditions (repeated from above)	NA	945	1,670	1,315
Change to water budget (reduction) compared to existing conditions (Change in Overall Consumptive Use + reduction in surface water use)	NA	765**	1,810**	1,510**

*Water consumption as of the mid-point of the mining phase of the Project would be less than baseline.

Source: KDSA 2013

** This would be the reduction if surface water was not kept on-site and if the Kings River and shallow groundwater were not in hydrologic connection. Source: KDSA, 2014

Agriculture would continue to occur throughout the Project duration in areas not yet disturbed by mining, and in areas where mining and reclamation backfilling have been completed. Irrigation water for these areas would continue to be obtained from the Hanke Ditch and Kings River. Currently, approximately 2,320 AF/yr is delivered to the Project site for irrigation of crops. Of this, approximately 1,630 AF/yr is consumed by the crops, and the remainder percolates to the aquifer.

The demand for irrigation water would decline as portions of the Project site are converted from agriculture to mining. As the agricultural acreage decreases, demand for irrigation water would decrease to approximately 650 AF/yr by the end of the mining. After mining and reclamation are complete, additional acreage would have been converted back to agricultural use, and the irrigation demand is expected to increase to approximately 1,005 AF/yr, which is less than baseline surface water consumption.

Groundwater would be used to supply the Project's mining related water demand. Mining related water usage would include pond evaporation, landscape irrigation, and plant operations. Plant related consumption would consist of plant and site-wide dust suppression, and losses associated with outgoing products such as concrete and rinsed aggregate products.

The maximum mining related water consumption would be approximately 1,320 AF/yr, which would occur during the final phases of mining. Most of this consumption would consist of evaporation from ponds that would be created by the Project. Plant related consumption would average 180 AF/yr, and would be minimized by recirculating process water. After mining and reclamation conclude, plant operations would cease and groundwater consumption would be limited to pond evaporation and riparian plant evapotranspiration, totaling approximately 1,130 AF/yr.

Overall, the Project would cause surface water consumption to decrease and groundwater consumption to increase. As of the middle point of the mining phase, water usage is expected to be less than baseline. Cumulatively, the Project is anticipated to increase total water consumption by approximately 140 AF/yr over baseline as of the end of mining, and 195 AF/yr after reclamation concludes.

This increase in groundwater consumption is considered minor compared to the baseline consumption, and to the available storage in the subbasin. The increase is not expected to substantially dewater existing offsite wells. Due to the Project site's proximity to the Kings River and the coarse-grained nature of the aquifer, local groundwater and Kings River are extensively interconnected and it is appropriate to consider the surface water and groundwater as one interconnected hydrologic system. Regardless, quarterly groundwater monitoring would be conducted to verify that groundwater levels are not substantially affected by the Project.

The aquifer in the Project site vicinity is recharged from local surface water bodies. The decrease in surface water consumption would result in additional water being contained in Hanke Ditch and the Kings River downstream from the Project site. This additional water would increase the amount of aquifer recharge from these surface water bodies. Also, due to the potential change in hydraulic head,

more groundwater recharge can also be expected from these water bodies if groundwater elevations do begin to decrease as a result of the Project.

After mining, some of the previously mined areas would be backfilled with silt materials expelled from the plant. Because these materials are mostly fine grained, this backfill could decrease the rate of groundwater flowing through the Project site. However, Phase 2B would not be backfilled with silt, and would instead be reclaimed as an open water feature. This is expected to provide a “window” through which groundwater flow to the Kings River would not be inhibited (KDSA, 2013).

2.3.9.4 Flood Water

As discussed in Sections 2.2.2 and 3.9, an updated Hydraulic Flood Analysis (Chang, January 2014) was conducted using recent topographic mapping for the Project site. The updated existing condition analysis indicates that the current floodplain on the Project site is significantly different than the mapped FEMA FIRM floodplain in several areas. Therefore, the updated existing conditions analysis serves as the appropriate baseline for the Project site. It was determined that the Project site is set back a minimum of 50 feet from the floodway.

The only Project area that would block the floodplain fringe is the Plant site. All other aspects of the Project would maintain or lower ground levels within the floodplain fringe. Most of the floodplain regulations apply to insurable structures. The only potentially insurable structures associated with the Project are certain facilities within the Plant site. Portions of the Plant site would be elevated by fill rising above the 100-year water surface elevations to protect the facilities from flood inundation. A portion of the fill would be placed within the floodplain, but outside the floodway, which is allowed by regulation. The results of the hydraulic analysis shows that plant fill would not affect water surface elevations.

The phases to be reclaimed to farmland would be filled back to the original grade resulting in no change to the floodplain. The phases reclaimed back to ponds would actually increase the flood-holding capacity in those phases because the water surface in the ponds would be 15-20 feet below the original grade of the land.

Figure 2-7 shows the regulated and designated floodways at the Project site.

2.3.10 Setbacks and Buffer Zones

Setbacks from Kings River and Riparian Habitat

In order to protect the habitat of fish and wildlife, the Project establishes the following setbacks and buffer areas in which no excavation of material or overburden would take place:

- One hundred (100) feet from the top of the Kings River bank;
- Fifty (50) feet from the regulated and designated floodways; or
- Fifty (50) feet from the dripline of riparian vegetation or mature oak trees;

- Or whichever is greater.

Setbacks from Residential Areas and Public Roads

No excavation of material or overburden shall take place within one hundred (100) feet from the public right-of-way and within twenty-five (25) feet from other property lines. Except for vegetated berms established for the purpose of visual screening and/or sound attenuation, no stockpiled soil or material shall be placed closer than twenty-five (25) feet from a property boundary.

Setbacks Between Adjacent Mining Phases

A minimum 30-foot wide buffer would exist between adjacent mining phases when the ultimate mining footprint is reached. The buffers would accommodate haul roads, safety berms and swales. For the phases that would be reclaimed to farmland, 40-foot wide undisturbed (not mined) levees would separate them from adjacent phases to be reclaimed as riparian and open water wildlife habitat.

2.3.11 Berms, Screens, Fencing and Lighting

Vegetated Berms and Screens

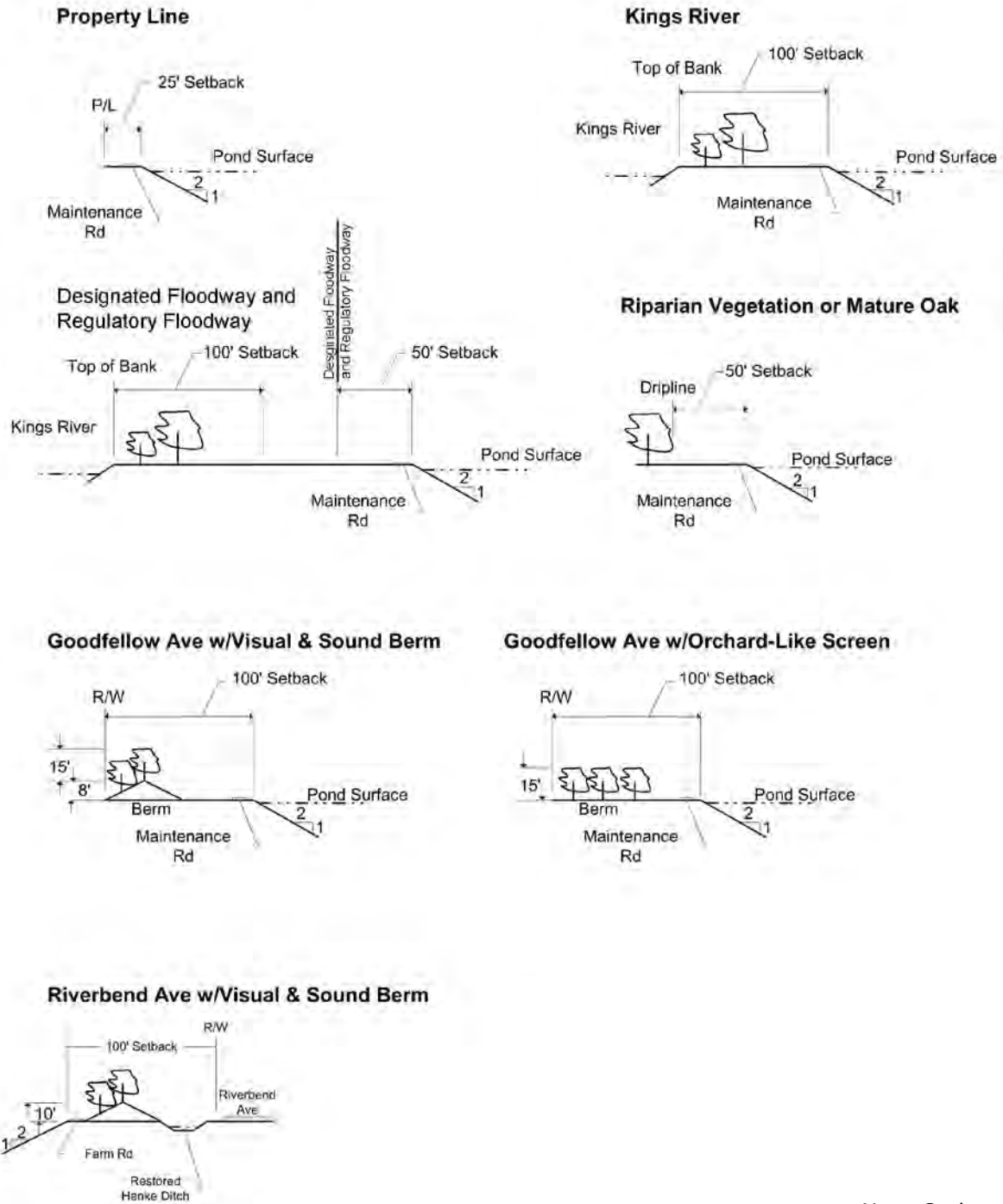
Several berms and orchard-like vegetated screens would be constructed to visually screen Project activities and facilities along what would otherwise be the most visible portions of the Project site. The berms would also attenuate noise from on-site excavation and processing activities.

Vegetated 8- to 10-foot-high berms would be constructed of overburden and topsoil and planted with evergreen trees in two staggered rows, with one row on top of the berm. In compliance with County screening policies, the trees would grow at least 15 feet high and would be irrigated. Figure 2-9 illustrates the typical berm cross-sections. Figures 3.1-1 through 3.1-6 simulate the berms in the operational phase of the Project site. Berms would be located as follows:

- Project eastern boundary adjacent to Riverbend Avenue – Ten (10) feet high and approximately 6,500 feet (1.2 miles) in length, spanning Phases 3A through 4A.
- Phase 6A northern boundary adjacent to Goodfellow Avenue – Eight (8) feet high and approximately 1,250 feet in length, extending to Riverbend Avenue.
- The Project proposes to construct the berms along Riverbend and Goodfellow prior to removal of overburden in the phase areas within 900 feet of the nearest residence(s) to be screened.
- Plant site western boundary adjacent to the Kings River – Ten (10) feet high and approximately 1,500 feet in length. This berm would be constructed prior to operating the plant during nighttime hours in order to screen light and noise. Additionally, the open area along the Kings River where portions of the Plant site would be visible from the river has already been planted with redwood trees, further limiting visual access to the Project site.

TYPICAL EXCAVATION SETBACKS AND BERMS

No Scale



Not to Scale

Source: Buada Associates, 2014

Figure 2-9 Typical Excavation Setbacks and Berms

Orchard-like screens would be planted along Goodfellow Avenue prior to overburden removal in the adjacent phases (i.e., Phases 1B, 2A, 6B and 8A/B). The screens would be planted within the 100-foot setback from the public right-of-way. The tree species would be evergreen trees (e.g., olives) planted at a minimum of four (4) rows parallel to Goodfellow Avenue, with adjacent rows off-set such that there are no gaps to ensure dense screening.

Fencing

The perimeter of the Project site along Riverbend and Goodfellow Avenues would be fenced with 6-foot high wire ranch fencing. The entrance gate would be at a minimum twenty-four feet wide. Signs would be placed at the entrance road to identify the processing plant.

Lighting

Lighting for nighttime operations and security would be provided at the Plant site area, and also at the Project site entry. Project site lighting would be installed in a manner so as to avoid spilling onto adjacent sites, and it would comply with all applicable County lighting standards and industry practices. The operator would use high pressure sodium and/or cut-off fixtures (or equivalent IDA-approved fixtures) instead of mercury-vapor fixtures for any required nighttime lighting of the dragline and the processing facilities. The lighting would also be designed to confine illumination to the Project site and/or to areas that do not include light-sensitive uses.

2.3.12 Mine Phasing

Mining would be conducted in 15 sequential phases as shown in Figure 2-7, commencing north of Goodfellow Avenue. Once the northern phases are mined (excluding the Plant site area), then clearing and excavation would commence on the southern phases. New excavation would proceed concurrently with reclamation of the previously mined areas as described below.

The estimated timing and duration of the phases are provided in Table 2-6. Actual excavation may occur sooner or later depending on the volume of material available in each phase and market conditions over time.

Agriculture would continue as an on-site activity until a given phase is deemed necessary for mining. This would enable both mineral extraction and agricultural production to operate simultaneously in different areas of the Project site and would maximize agricultural resources and productivity. For each of the phases to be reclaimed as farmland, farming will resume within two years after the phase has been filled. By about halfway through the anticipated 75-year life of the Project approximately 135 of the 268 acres to be reclaimed to farmland would be reclaimed as farmland.

Table 2-6. Estimated Mining and Reclamation Schedule

Phase	Acres ² (Approx.)	Commence Excavation ¹	Reclamation Type ³	Complete Reclamation ¹
1A	23	2015	Farmland	2028
1B	18	2019	Farmland	2032
2A ⁴	27	2025	Farmland	2043/2090
2B	27	2022	Riparian & Open Water Habitat	2026
3A	67	2028	Farmland	2054
3B	68	2034	Farmland	2090
4A	38	2040	Riparian & Open Water Habitat	2050
4B	29	2045	Riparian & Open Water Habitat	2053
5	37	2050	Riparian & Open Water Habitat	2090
6A	34	2054	Farmland	2069
6B	31	2058	Farmland	2083
7	80	2062	Riparian & Open Water Habitat	2072
8A	44	2068	Riparian & Open Water Habitat	2077
8B	44	2075	Riparian & Open Water Habitat	2083
9 ⁵	52	2081	Riparian & Open Water Habitat	2090
Total	619			

^{1.} Dates are estimates only. Actual excavation and reclamation dates would vary with permit approval date, market demand and actual depth and volume of marketable material.

^{2.} Gross acres, includes farm roads.

^{3.} Actual final reclamation of each phase would depend on the volume and availability of overburden and process fines occurring on site.

^{4.} To be used for portable aggregate processing plant during mining of Plant site in Phase 9.

^{5.} Phase 9 consists of returning mining operations north of Goodfellow Avenue to mine the acreage where the Plant site is located once Phase 8B is fully mined.

2.3.13 Material Removal and Aggregate Extraction Methods

A “wet mining” method is proposed which would use an electric dragline to extract the aggregate material in the mining areas. No explosives or dewatering of the excavation would be required.

2.3.13.1 Topsoil Removal

Topsoil is the approximately two-foot thick surface layer with the highest organic and nutrient content necessary for plant growth, whether agricultural or native. Due to its importance as growth media in the reclamation and revegetation process, and for the construction of the vegetated berms, topsoil would be salvaged for later use. Under typical conditions, topsoil removal would take place approximately one year prior to mining each phase, thereby allowing agricultural use of the land to continue as long as possible.

Topsoil would be removed as a separate layer from each phase primarily by using wheel tractor-scrapers accompanied by water trucks to minimize dust. Scrapers can transport topsoil for storage or spread it at

previously excavated phases for use as the final cover for reclamation. If conditions become more difficult or access constraints prevent the use of scrapers, then a hydraulic excavator, bulldozer, or front-end loader may be used to remove topsoil, and haul trucks can be used for transport. Water trucks would be used to minimize dust.

Topsoil that cannot be used right away would be stockpiled separately from subsoil overburden. Stockpiled topsoil would be planted with a vegetation cover or would be protected by other equally effective means if necessary to prevent water and wind erosion.

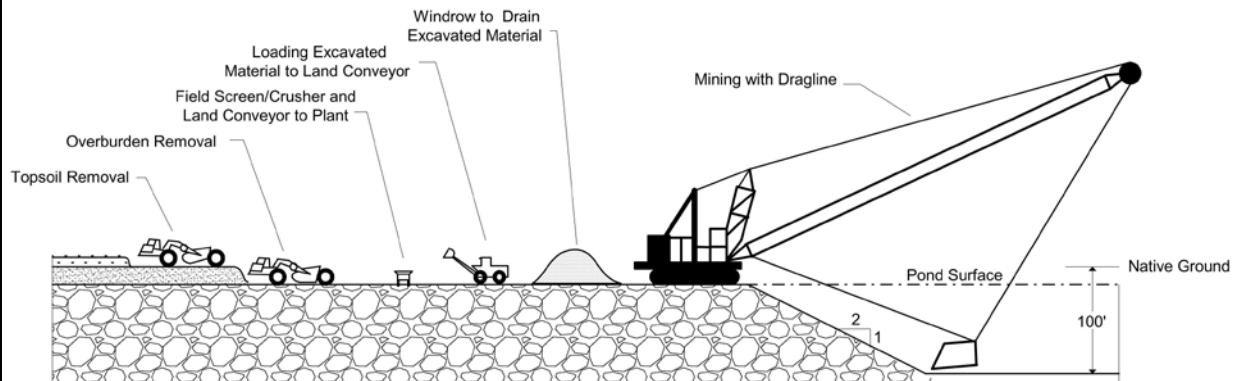
2.3.13.2 Overburden Removal

Overburden removal would occur intermittently as a new mining area is opened. Overburden is the material directly beneath the topsoil and overlying the sand and gravel deposit. Overburden is approximately 15 to 22 feet thick and the quantity for removal would vary by mining phase. Overburden removal would occur on an estimated annual equivalent of one month per year using conventional scrapers. The scrapers would be accompanied by water trucks to minimize dust. Overburden would be: used with topsoil to construct the vegetated screening berms; combined with processing fines to fill the phases to be reclaimed as farmland; used to shape the edges of the excavated phases to be reclaimed as riparian and open water habitat ponds; or stored separately for later use in reclamation.

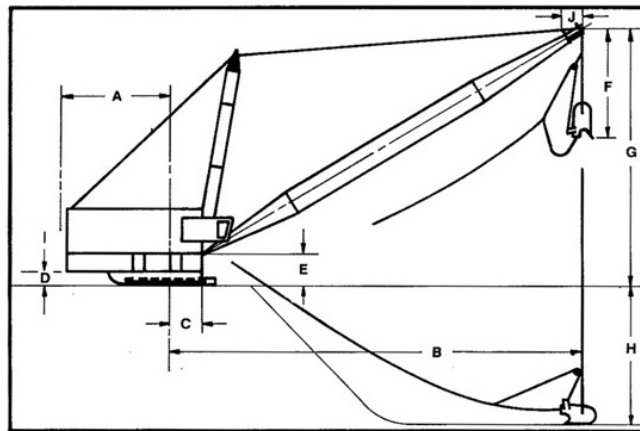
2.3.13.3 Aggregate Extraction

After removal of the overburden, the aggregate layer (i.e., the marketable sand and gravel deposit) would be accessible. The overall approach to aggregate excavation is by “wet mining” to depths of approximately 100 feet deep, where the lower 80 to 85 feet would be below the surface of exposed groundwater. As a result, the alluvial aggregate would be immersed in groundwater. The excavation method would use an electric dragline, which removes the aggregate to the full depth of the mining pit, leaving behind groundwater and thus precluding the need to dewater the excavation. Explosives would not be used for the removal of aggregate materials.

An electric dragline is an electric-powered excavating machine with a long, straight boom from which an open-mouthed bucket is suspended by a cable. A Bucyrus 380 electric dragline (or equivalent) is proposed for excavation. The boom is used to cast the bucket away from itself and then down beneath the water to the bottom of the excavation. The bucket is pulled back toward the machine with another cable, loading the bucket with water-saturated aggregate. The bucket is then hoisted up and the excavated material is stockpiled in windrows to drain. After the stockpiled material has drained, a diesel-powered loader would transport the material to an electric-powered scalping screen which would separate oversized rock to be screened and crushed by a field crusher before the material is transported to the processing plant. Figure 2-10 shows a typical drag line excavator.



TYPICAL DRAG LINE EXCAVATOR



Specification 380-WE 0480

Boom Length	B Operating Radius	Boom Angle	Maximum Suspended Load (lbs.)	G Boom Pt. Height	G-F Approx. Dumping Height	H Digging Depth	Drag			Hoist		
							Drum Diam.	No.	Diam.	Drum Diam.	No.	Diam.
170'	138'	40°	64,000	120'	82'	100'	57½"	1	2"	73½"	1	2"

Source: Buada Associates, 2014

Figure 2-10 Illustration of Dragline Excavation

2.3.14 On-Site Aggregate Transport Methods

Existing farm roads traverse and generally define the perimeters of Project mining phases. Many of those unpaved roads would serve as transport routes for materials, service, and support vehicles, and continued agricultural operations. The roads would be maintained by a grader and water truck.

Material Transport to Processing Plant

As described above, after the stockpiled aggregate material has drained, a diesel-powered loader would transport the material to an electric-powered scalping screen before the material is transported to the plant for further processing. Mined aggregate from the Phase 1A pit would initially be transported to the processing plant by off-road trucks for approximately one year, during which time conveyors would be assembled. When the open pit becomes large enough, an electric-powered conveyor would replace the off-highway vehicles for material transport to the Plant site. After the overland conveyors are operational, haul trucks would only be used for aggregate material transport when the conveyors are shut down for occasional non-routine repairs.

When mining operations shift to Phases 6A through 8B south of Goodfellow Avenue, transport of mined aggregate from those phases to the Plant site would be by conveyor through a tunnel to be constructed under Goodfellow Avenue. The necessary geological reports would be prepared and the tunnel would be constructed in accordance with regulatory requirements prior to overburden removal on those phases. The tunnel would be approximately ten (10) feet in diameter and would not be used by haul trucks or other vehicles.

Material Transport Within Plant Site

Aggregate delivered to the processing area would be placed in a loading bin for the stacker conveyor (when haul trucks are used), or placed directly onto the stacker conveyor (when conveyors are used), which would drop the material onto a single surge pile. From the surge pile, material would be dropped onto underground conveyors transporting it to the primary and secondary crushers, sizing screens, and additional conveyors. Based on the sizing screens, different sized material would be directed to different aggregate product storage piles.

2.3.15 Material Processing Methods

Other than field screening and crushing (see description below), all material processing operations would take place at the Plant site, which would occupy up to 53 acres. Figure 2-7 shows the location and Figure 2-11 provides a conceptual layout of the Plant site, including the aggregate processing plant, HMA plant, RMC plant, and portable concrete and asphalt recycle plant.

2.3.15.1 Scalping Screen and Field Crusher

An electric-powered scalping screen and field crusher would screen and crush oversized rock before the overland conveyor transports the excavated material to the aggregate processing plant.

2.3.15.2 Aggregate Processing Plant

The aggregate processing plant is the principal component of the Plant site. It would process aggregate for transportation off-site by private contractor. The processing plant would typically be divided into a primary plant, secondary plant and wash plant. The plant would be operated from a control tower.

Primary Plant

The primary plant would screen and separate sand from larger materials. Sand would be classified into different construction grade materials and stockpiled. Water would be introduced to wash fines from the excavated material. The fines would be sent to a wash plant. The remaining larger sized materials would be crushed, and the combination of crushed rock and sand would be conveyed to the secondary plant for further processing. Customer trucks would be loaded with finished products by front-end loaders.

Secondary Plant

The secondary plant would use additional screening, washing equipment, and crushers to create different construction grade materials. Finished products would be stockpiled and used by the on-site ready-mix-concrete and asphalt plants or sold directly to outside customers. Customer trucks would be loaded with finished products by front-end loaders.

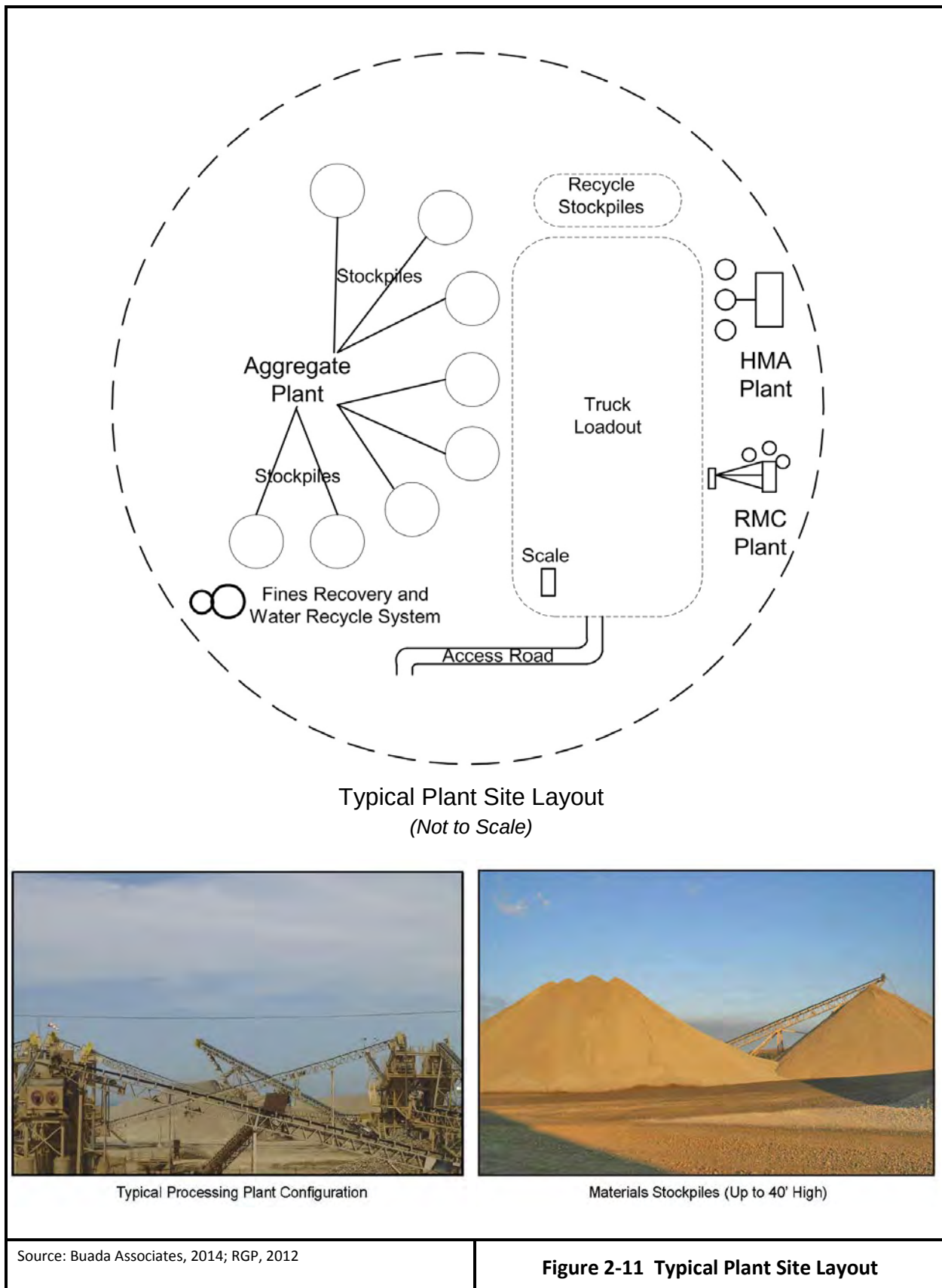
Wash Plant

Fines from the excavated material and fines recovered from crushing would be sent to the wash plant where a fines recovery system would separate the fines from the water, thereby eliminating the need for settling ponds. The fines would be screened and the marketable products would be stockpiled. The non-marketable fines would be stockpiled for later use as fill in the reclamation of certain phases of the Project back to farmland. Recovered water would be recycled back to the aggregate plant as process water.

Equipment and Supporting Facilities for Aggregate Processing Plant

Equipment and supporting facilities for the aggregate processing plant would include, but would not be limited to:

- Screens and screening towers
- Front-end loaders
- Crushers
- Washers
- Conveyors
- Sand cyclones
- Sand screws
- Sand/aggregate truck loadout bins
- Product stockpiles
- Surge pile
- Fuel tanks
- Water trucks
- Scale
- Pollution control equipment
- Fines recovery system
- Recycle water pumps
- Computer control tower
- Maintenance shop
- Parts storage building
- Other accessory equipment and buildings



2.3.15.3 Portable Aggregate Plant

During the final phase of the Project when the Plant site (Phase 9) needs to be mined for aggregates, the permanent processing plant equipment would be removed and the area excavated in the same manner as previous phases. The Phase 9 materials would be processed by an electric-powered, portable aggregate plant located in the Phase 2A area, which by then would be filled with overburden and processing fines. The portable plant would use relocated components of the original processing plant or would be a separate portable processing plant.

Equipment and Supporting Facilities for the Portable Aggregate Plant

Equipment for the portable aggregate plant would include, but would not be limited to:

- Crushers
- Screens
- Front-end loaders
- Sand screws
- Conveyors
- Water trucks

2.3.15.4 Hot Mix Asphalt Plant

An HMA plant would produce paving materials from a mixture of size-graded, high quality aggregate (which can include reclaimed asphalt pavement), and liquid asphaltic cement. Sand and crushed rock from the aggregate processing plant would be screened, dried and heated in a natural gas or propane-fired dryer/burner and mixed with liquid asphaltic cement to produce asphalt. Liquid asphaltic cement would be imported by truck and stored in above-ground tanks. The emissions from the dryer/burner would be ducted to a baghouse. The hot mixed asphalt concrete may be discharged directly into trucks from the mixer or conveyed to storage silos for discharge into trucks at a later time. Operation of the plant would be controlled from a control room. Figure 2-12 shows the typical configuration of an HMA plant.

At the end of each production day, excess asphalt remaining in the plant would be dried and stockpiled. This material would periodically be recycled for blending with fresh asphalt concrete. A recycled asphalt pavement feed system may be added to the asphalt plant, wherein recycled asphalt product would be blended with new asphaltic concrete.

Equipment and Supporting Facilities for the Hot Mix Asphalt Plant

Equipment and supporting facilities for the HMA plant would include, but would not be limited to:

- Aggregate storage bunkers
- Conveyors
- Elevators
- Aggregate dryer and batch tower
- Elevated storage silos
- Dust silo
- Hot oil heater (propane- or natural gas-fired)
- Pollution control equipment
- Storage tanks
- Control tower
- Shop
- Truck load-out station
- Other accessory equipment
- Front-end loaders

2.3.15.5 Ready-Mix Concrete Plant

The RMC plant would use sand and gravel processed at the plant in the manufacturing of ready-mix concrete. Portland cement, supplemental cementitious materials (SCM) and/or admixtures would be imported by truck and stored in silos or tanks. The RMC plant would store, convey, measure and discharge the essential materials directly into on-highway mixer truck drums for transport to a job site. In addition to sand, gravel and cement, water would be added to the truck and the concrete would be mixed during transport to the job site. Return concrete (i.e., concrete that is unused at the jobsite and returned to the Plant site in the ready-mix trucks) would be dried and stockpiled for later recycling into miscellaneous road base.

The RMC plant would include a system to recycle water that is used to rinse out ready-mix concrete trucks. At least once a day, the mixer on each truck would be washed out and the wash water would be deposited into a series of concrete-lined holding basins. After solids are settled out, water would be recycled to the concrete plant for reuse in concrete. Residual sediment in the holding basins would be mixed with base rock for use in road base. Baghouses would control dust emissions. The concrete plant would be operated from a control room. Figure 2-12 provides a schematic of a typical concrete plant.

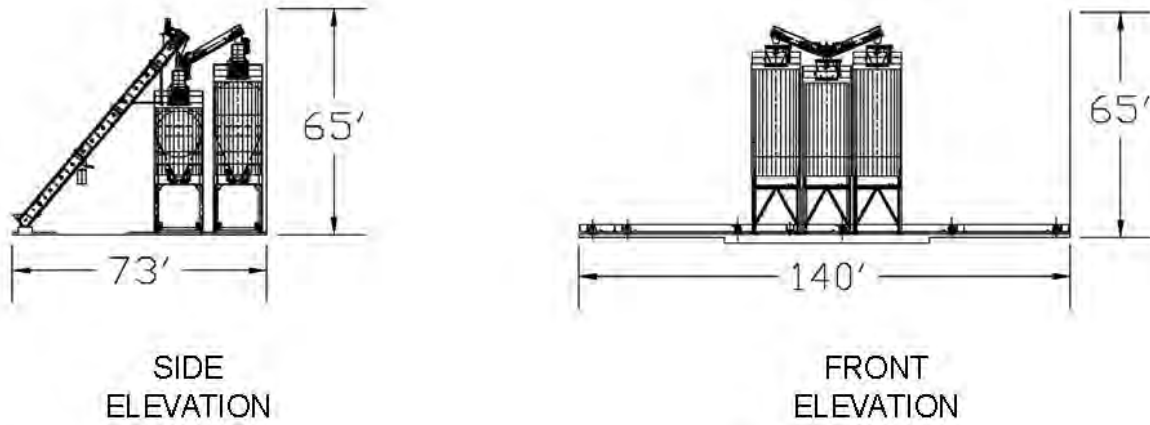
Equipment and Supporting Facilities for the Ready-Mix Concrete Plant

Equipment and supporting facilities for the RMC plant would include, but would not be limited to:

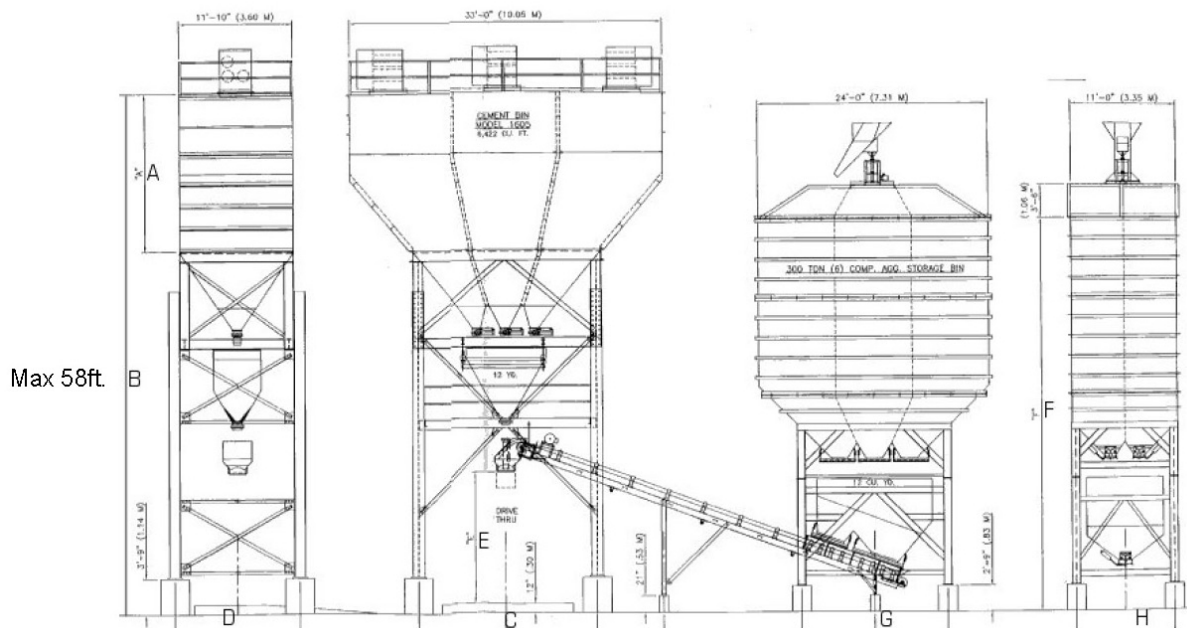
- Ground aggregate storage bins
- Front-end loaders
- Aggregate feed conveyors
- Batch plant
- Elevated cement silos
- Pollution control equipment
- Storage buildings
- Batch office
- Water trucks
- Water tanks
- Water reclaimer
- Ad-mix tanks
- Weigh hopper
- Other accessory equipment

2.3.15.6 Portable Concrete and Asphalt Recycle Plant

An electric-powered portable crushing and screening plant would be periodically brought in to recycle excess asphalt produced at the asphalt plant and stockpiled return concrete. Unused concrete from the returning ready-mix concrete trucks would be poured onto pads at the recycle center where it would be dried, crushed, and sold for subsequent use in construction base material (e.g., miscellaneous road base). Crushed asphalt debris and stockpiled, unsold HMA would be recycled as recycled asphalt product (RAP) and later blended with fresh asphalt concrete. The recycle plant would also recycle concrete and asphalt pavement imported to the Project Site from construction demolition or road rebuilding sites. Recycling old concrete and asphalt reduces the volume of fill in local landfills and helps extend the available aggregate reserves in Fresno County.



Typical Asphalt Plant Dimensions



Typical Concrete Plant Dimensions

Source: RGP, 2012

Figure 2-12 Typical Asphalt and Concrete Plant Schematics

Asphalt or concrete to be recycled would be fed through a crusher(s), screens and conveyors, and stockpiled. The emissions from the crusher and screens would be controlled by water sprays; the conveyors would transfer wetted materials between process equipment and the storage piles.

Equipment and Supporting Facilities for the Portable Concrete and Asphalt Plant

Although the specific location on the Plant site is not known at this time, equipment for the portable recycle plant would include, but would not be limited to:

- Portable crusher
- Portable screens
- Conveyors
- Radial stacker
- Product stockpiles
- Front-end loaders
- Diesel powered generator

2.3.15.7 Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

The Calaveras Materials Inc. (CMI) Kings River Sand and Gravel mining operation is located adjacent to the Project site. The CMI project is in the early phases of mining and establishing a processing plant on an approved 315-acre aggregate mining site adjacent to and east/southeast of the Project Phases 6A, 6B and 7. The CMI project currently operates under Fresno County CUP 3052 and, because it is in its early development phases, most of the acreage remains in agricultural production.

Although preliminary in concept, future operators of CUP 3052 may be interested in an agreement with Riverbend to mine Phases 6A, 6B and 7 and process the excavated material at the CUP 3052 plant. If such an agreement were made, CUP 3052 would have to be amended to import material from the Riverbend Project site. Under such an agreement, the aggregate in Riverbend Phases 6A, 6B and 7 would be excavated by an electric dragline and transported to the CUP 3052 plant by overland conveyor for processing in the same manner as if it was mined by Riverbend and conveyed to the Riverbend aggregate plant.

2.3.16 Materials Used or Stored

Construction aggregates (rock, sand and gravel) produced by the Project's aggregate processing plant would be stockpiled on the Plant site. Cement, Supplemental Cementitious Materials (SCM) and/or admixtures for use in producing ready-mix cement would be imported and stored in cement silos and other containers at the RMC plant. Propane may be used to fuel the HMA plant until natural gas is available. Asphaltic oil used by the HMA plant to produce asphalt would be imported and stored in an above-ground storage tank (AST) with appropriate containment. Diesel and gasoline would be imported and stored in ASTs with secondary containment. Products needed to service the equipment used at the Project site, such as gear and lube oil, transmission oil, maintenance supplies, etc., would be imported and stored at or near the maintenance shop. All potentially hazardous materials or waste would be managed in accordance with the Hazardous Materials Business Plan and applicable regulations and requirements.

2.3.17 Avoidance, Minimization and Environmental Protection Measures

Numerous design features, BMPs, operating practices and other types of protective measures (Protection Measures) have been incorporated into the Project to avoid or minimize potential impacts to the environment. In addition to these Protection Measures, the Project would be in compliance with all the applicable local, State and Federal regulations and requirements. These regulatory requirements as well as additional details on the Protection Measures are provided in the Environmental Impact Analysis (Section 3) for each of the potentially affected resource areas. Employee training programs would be conducted to educate personnel on the environmental responsibilities associated with their specific job, including but not limited to regulatory requirements, preventative inspection and maintenance, spill response, emergency response, etc. A training plan would be prepared and provided to the County as part of the Hazardous Materials Business Plan.

The following identifies some of the key Protection Measures that would be implemented during the Project. More detailed discussions of the Protection Measures, as well as additional aspects of the Project that would minimize potential impacts, are provided in Section 3.0 and the technical support documents located in the appendices of the DEIR.

1. Prior to removal of topsoil and overburden, the area would be irrigated or sprayed by water trucks, as necessary to comply with air quality regulations. (Air Quality, Dust)
2. Excavated material would contain approximately 10% natural moisture from having been excavated below the groundwater level. (Air Quality, Dust)
3. Water trucks would be utilized to wet down unpaved and asphalt plant and haul roads. (Air Quality, Dust)
4. Dust palliatives, such as lignin sulfonate or magnesium chloride, would be applied to the main haul roads as necessary. (Air Quality, Dust)
5. The first half mile of the entrance road would be paved with asphalt and would be at least 24 feet wide. In addition, the main access roads to the Plant site, ready-mix concrete plant and asphalt plant would be paved with asphalt. (Air Quality, Dust)
6. A wheel washer would be installed after the scales immediately before egress on paved roads to prevent trackout to the public highway. (Air Quality, Dust, Water Quality)
7. The off-road fleet of vehicles and mobile equipment would meet applicable performance standards (e.g. diesel Air Toxic Control Measures (ATCMs)). (Air Quality)
8. Mined aggregate would be initially transported to the processing plant by off-road haul trucks for approximately one year. Subsequently, mined aggregate would be transported to the plant by electric-powered conveyors. (Air Quality)
9. An electric-powered dragline would be used after overburden is removed from each mining phase. This eliminates diesel engine emissions that would otherwise occur from a diesel dragline

- or other diesel excavation equipment and enables “wet mining” methods which reduce fugitive dust. (Air Quality)
10. The aggregate mine and associated aggregate plant, asphalt plant, concrete plant, and recycling facilities would operate in compliance with applicable air quality regulations. (Air Quality)
 11. Authorities to Construct and Permits to Operate would be obtained from the SJVAPCD for the aggregate processing plant, asphalt plant, and concrete plant at which time the equipment would be required to utilize Best Available Control Technology (BACT). (Air Quality)
 12. The processing plant would wash materials, thereby minimizing dust during processing. It would be equipped with water sprays and, if necessary, other emission control devices if required by the SJVAPCD, at key emission points, including crushers, fine and coarse screens, and conveyor transfer points. (Air Quality, Dust)
 13. The HMA plant would be equipped with a baghouse for the dryer/batch tower and a fiberbed filter (or equivalent) for the silos and truck loadout. Odorous emissions (primarily VOCs and semi-volatile organic compounds (SVOCs)) from asphaltic cement would be minimized by circulation of mixing drum vapors to the dryer burner before discharge, and the fiberbed filters. (Air Quality, Dust, Odor)
 14. The RMC plant would control fugitive emissions and dust by using a baghouse at the truck loadout, filter vents during silo loading and water sprays as necessary at the sand and aggregate conveyor drops. (Air Quality, Dust)
 15. Air pollution control equipment would meet Best Available Control Technology. (Air Quality, Dust)
 16. Encourage employees to use alternative transportation modes. (Air Quality)
 17. The Project site would be designed to address surface runoff and drainage as described in the Surface Runoff and Drainage Plan and per the requirements of the SWPPP. (Water Quality)
 18. The Plant site and erodible surfaces within the Plant site area would be graded to prevent drainage and stormwater runoff from raw materials, products and by-products from entering the river. (Water Quality)
 19. The Project site would be graded to prevent sediment from the stockpiles or the excavation areas from entering the river. (Water Quality)
 20. Loading and unloading of materials would take place in designated areas that would be graded and designed to prevent stormwater runoff from entering the river. (Water Quality)
 21. Equipment and vehicle parking/storage areas would be graded to prevent stormwater runoff to surface water or into the groundwater. (Water Quality)
 22. BMPs (e.g., gravel bag or rock check dams along drainage swales, silt fencing or fiber rolls to contain drainage and sediment, lined swales, etc.) would be implemented to prevent stormwater runoff in accordance with the Project SWPPP. (Water Quality)

23. Berms would be placed between the created ponds and farmland to prevent agricultural surface water runoff from entering the ponds. (Water Quality)
24. Mobile vehicles would be maintained and repaired in a covered shop or on paved surfaces. Such areas would be designed to collect pollutants. All pollutants would then be disposed of in accordance with local, State, and Federal regulations. Inspection and maintenance programs would be established to ensure that vehicles are operating properly and leaks are prevented to the maximum extent feasible. (Water Quality, Haz Mat)
25. Excavation equipment would be inspected, maintained and repaired to ensure that the equipment is operating properly and leaks are prevented to the maximum extent feasible. (Water Quality, Haz Mat)
26. All hazardous materials and hazardous waste would be managed and disposed of at permitted off-site facilities in accordance with local, State and Federal regulations. (Air Quality, Water Quality, Haz Mat)
27. Agricultural chemicals such as pesticides and fertilizers will not be stored at the Project site. (Water Quality, Haz Mat)
28. Vehicles would be fueled on concrete pads next to the fueling areas. The fueling areas would be designed to manage stormwater so that it can be inspected before discharge in accordance with local, State, and Federal regulations. Fuel would be stored in double-wall concrete above ground storage tanks or in containment in accordance with applicable regulations. (Water Quality, Haz Mat)
29. Vehicle washing would take place in specific paved areas adjacent to the shop that are designed to drain to holding ponds, a concrete lined sump or holding tank, and prevent stormwater runoff to surface or groundwater. Steam cleaning would take place on concrete or hard surface pads or in the enclosed shop, which would be designed to collect and retain pollutants. Such pollutants would then be disposed of in accordance with local, State and Federal regulations. (Water Quality, Haz Mat)
30. The Project would be set back a minimum of 50 feet from the regulated and designated floodways. (Water Quality, Haz Mat)
31. The phases to be reclaimed to farmland would be filled back to the original grade, resulting in no change to the floodplain, and the phases reclaimed back to ponds would be 15-20 feet below the original grade of the land (actually increasing the flood-holding capacity). (Water Quality)
32. Dewatering of excavations would not be utilized for the proposed mining operations. (Water Quality)
33. The Project would not entail the use of settling basins. (Water Quality)
34. Personnel would be trained in surveillance and control of mosquitos and mosquito fish would be placed in the ponds. (Hazards)

35. Groundwater would be monitored quarterly to verify that groundwater levels are not adversely affected by the Project. The results from this monitoring would be compared to baseline values and climatic conditions to determine if there is an adverse effect. (Water Quality)
36. Blasting would not be used for the proposed mining operations. (Air Quality, Noise, Vibration)
37. The HMA plant would be equipped with an exhaust stack silencer. (Noise)
38. The main aggregate plant would be equipped with urethane screens on the elevated screen decks and heavy urethane or rubberized liners on the hoppers and chutes. (Noise)
39. Mobile equipment would be equipped with noise suppressor mufflers in compliance with applicable local, State, and Federal laws and regulations. (Noise)
40. Smart backup alarms would be utilized and adjusted to ambient noise levels. Strobe lights would replace audible back-up alarms during non-daylight working hours subject to Mine, Safety and Health Administration (MSHA) approval. (Noise)
41. A 10-foot high berm would be constructed along the west side of the Plant site. (Noise, Visual)
42. Electric dragline excavation operations within 1,000 feet of an existing residence would be conducted such that the dragline boom is facing the nearest residences, thereby providing greater separation between those residences and the dragline motors/fans, and orienting the cooling fan outlet (which is the loudest dragline noise source and located on the opposite side of the dragline than the boom) away from those residences. (Noise)
43. Noise from the dragline will be measured immediately upon commencement of dragline operations at the Project site. In the event that additional noise control measures are required to satisfy the Fresno County Noise Ordinance standards, those measures would include, but not be limited to, replacing fan motors with variable drive motors and/or installation of cooling air inlet and/or exhaust silencers directly to the dragline as required. (Noise)
44. Overburden removal and excavation activities would be limited to daytime hours unless it can be demonstrated through on-site noise measurements that such activities could occur during nighttime hours without exceeding the project standards of significance at nearby residences. (Noise)
45. Excavation of material or overburden would not take place within one hundred (100) feet of the public right-of-way and within twenty-five (25) feet of other property lines. (Noise, Visual)
46. Except for vegetated berms established for the purpose of visual screening and/or noise attenuation, no stockpiled soil or material would be placed closer than twenty-five (25) feet from a property boundary. (Noise, Visual)
47. A 10-foot high berm would be constructed near the western edge of the proposed 100-foot excavation setback. (Noise, Visual)
48. An 8-foot tall berm would be constructed near the southern edge of the proposed 100-foot excavation setback along the south side of Goodfellow from Riverbend Avenue to 2,000 feet west of Riverbend Avenue. (Noise, Visual)

49. Berms along Riverbend and Goodfellow would be constructed prior to removal of overburden in the area of the phases within 900 feet of the nearest residence(s). (Noise, Visual)
50. Ten (10) foot high berms approximately 1,500 feet in length would be constructed along the Plant site western boundary adjacent to the river prior to operating the plant during nighttime hours. (Noise, Visual)
51. Recycle plant operation would be limited to daytime hours (7 a.m. to 10 p.m.). (Noise)
52. Operations would occur primarily during daylight hours. Specific limits on certain operations have been identified based on the results of the noise analysis discussed in Section 3.11.5.2. (Noise)
53. Operations during the time of year when daylight hours are shorter, or for any nighttime operations, would require lighting to provide a safe operating environment. For nighttime lighting, high pressure sodium and/or cut-off fixtures (or equivalent IDA-approved fixtures) would be used instead of mercury-vapor fixtures for any required nighttime lighting of the dragline and the processing facilities. The lighting would also be designed to confine illumination to the Project site, and/or to areas that do not include light-sensitive uses. (Lighting)
54. Prior to demolition of existing structures, asbestos and lead based paint surveys would be performed and, based on the findings, the demolition would be conducted in accordance with applicable regulations and requirements. (Hazardous Materials, Air Quality)
55. If an abandoned underground storage tank is discovered, the County would be notified and the tank would be removed in accordance with applicable regulations and requirements. (Water Quality)
56. In order to protect the habitat of fish and wildlife, the Project establishes the following setbacks and buffer areas in which no excavation of material or overburden would take place: one hundred (100) feet from the top of the Kings River bank; fifty (50) feet from the regulated and designated floodway; or fifty (50) feet from the dripline of riparian vegetation or mature oak trees; whichever is greater. (Biology, Visual)
57. Approximately 351 acres of the Project site would be reclaimed to open space and open water wildlife habitat. (Biology)
58. Employee training programs will be conducted to educate personnel of habitat sensitivity issues. (Biology)
59. Agriculture would be continued as an on-site activity until a given phase is deemed necessary to mine. (Agriculture)
60. Approximately 268 acres of the Project site would be reclaimed to farmland. (Agriculture)
61. Top soil and overburden would be carefully removed, stored and protected so that it can be used to recover reclaimed areas with farmable soils. Topsoil would not be stockpiled beneath the groundwater level. (Agriculture, Water Quality)
62. An area of potential cultural significance would be excluded from the Project. (Cultural)

2.4 Reclamation Plan

2.4.1 Reclamation End Uses

The Reclamation Plan (Figure 2-13 and Section 4 of the Surface Mining and Reclamation Plan, Appendix B) is designed to return as much land as possible back to farmland. Approximately 268 acres, or 43% of the Project site, are to be reclaimed as farmland in this manner.

Overburden together with processing fines would be used to fill selected phases. The filled phases would be topped with several feet of topsoil and reclaimed back to farmland at the approximate original grade. For the remaining phases, where there is not sufficient overburden and processing fines to fill the phases, approximately 351 acres, or 57 % of the Project site, would be reclaimed to riparian and open water wildlife habitat. In these areas, a series of deep-water ponds would be created. Cut slopes above the water line would be covered with several feet of topsoil, seeded with erosion control grasses and planted with native riparian vegetation pursuant to the Revegetation Guidelines (Appendix F of the Surface Mining and Reclamation Plan) prepared for the Project. Reclamation of these phases would create approximately 351 acres of riparian (33 acres) and open water (318 acres) wildlife habitat.

Table 2-7 provides a summary of the reclaimed end uses.

Table 2-7. Reclaimed End Uses

Use	Approximate Acres
Farmland	268
Riparian Habitat	33
Open Water Habitat	318
Total	619

2.4.2 Phasing

Mining and reclamation would be conducted in 15 sequential phases. For each of the phases to be reclaimed as farmland, farming would resume within two years after the phase has been filled in the manner described above. For each of the phases to be reclaimed as open water and riparian habitat, the phases would be reclaimed within two years of the completion of mining in that phase.

The timing of the phasing and scheduling shown in Figure 2-8 are rough estimates only. Actual excavation and reclamation may occur sooner or later depending on the volume of material available in each phase and market conditions over time.

Table 2-8. Estimated Mining and Reclamation Schedule

Phase	Pre-Mining (Acres) ^{2, 3}	Farmland (Acres) ^{2, 3}	Open Water (Acres) ^{2, 3}	Riparian (Acres) ^{2, 3}	Complete Reclamation
1A	23	23			2028
1B	18	18			2032
2A ⁴	27		23	4	2043/2090
2B	27	27			2026
3A	67	67			2054
3B	68	68			2090
4A	38		34	4	2050
4B	29		26	3	2053
5	37		33	4	2090
6A	34	34			2069
6B	31	31			2083
7	80		73	7	2072
8A	44		41	3	2077
8B	44		39	5	2083
9	52		49	3	2090
Totals	619	268	318	33	

^{1.} Dates are estimates only. Actual excavation and reclamation dates will vary with permit approval date, market demand and actual depth and volume of marketable material.

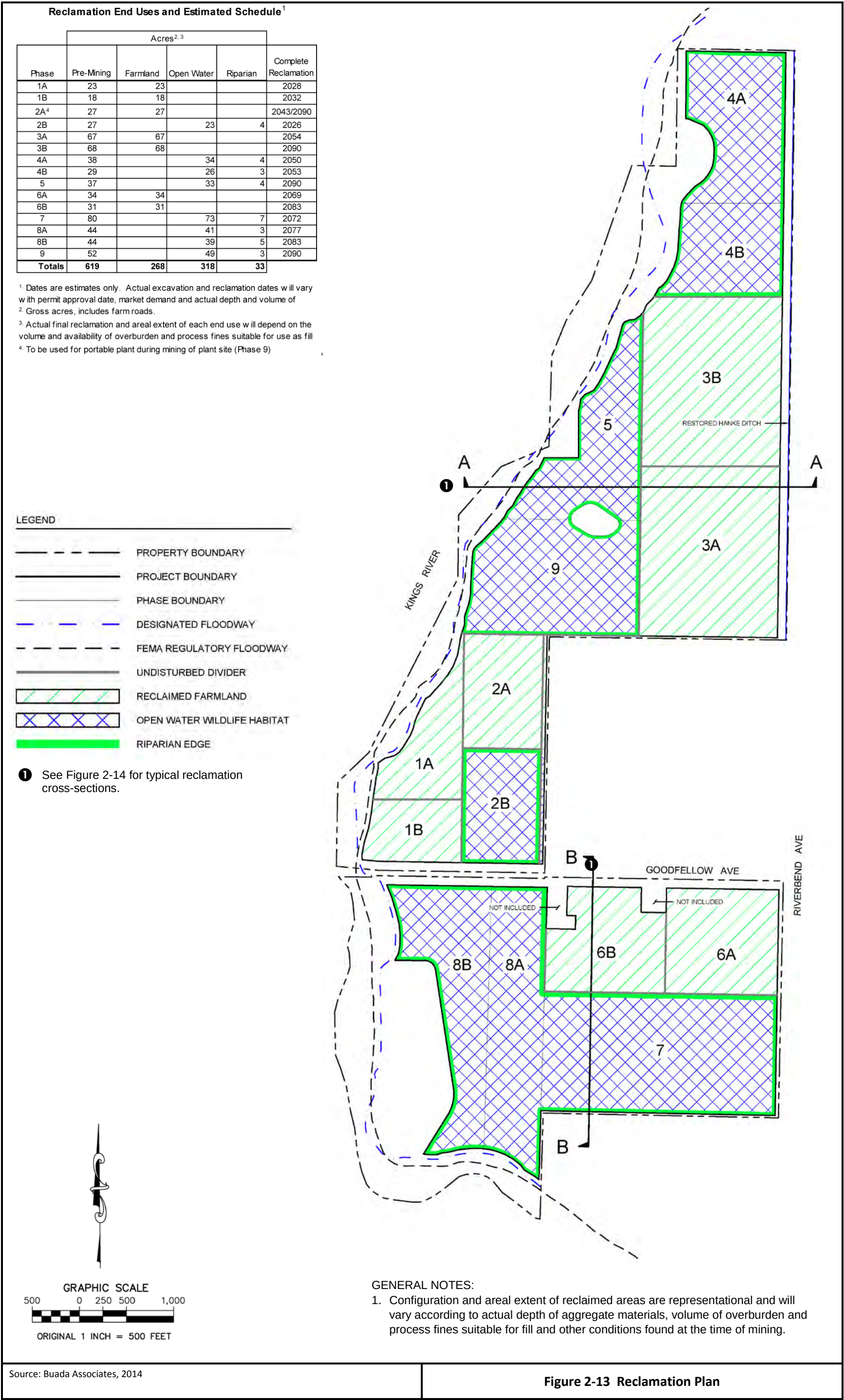
^{2.} Gross acres, includes farm roads.

^{3.} Actual final reclamation and areal extent of each end use will depend on the volume and availability of overburden and process fines suitable for use as fill occurring on site.

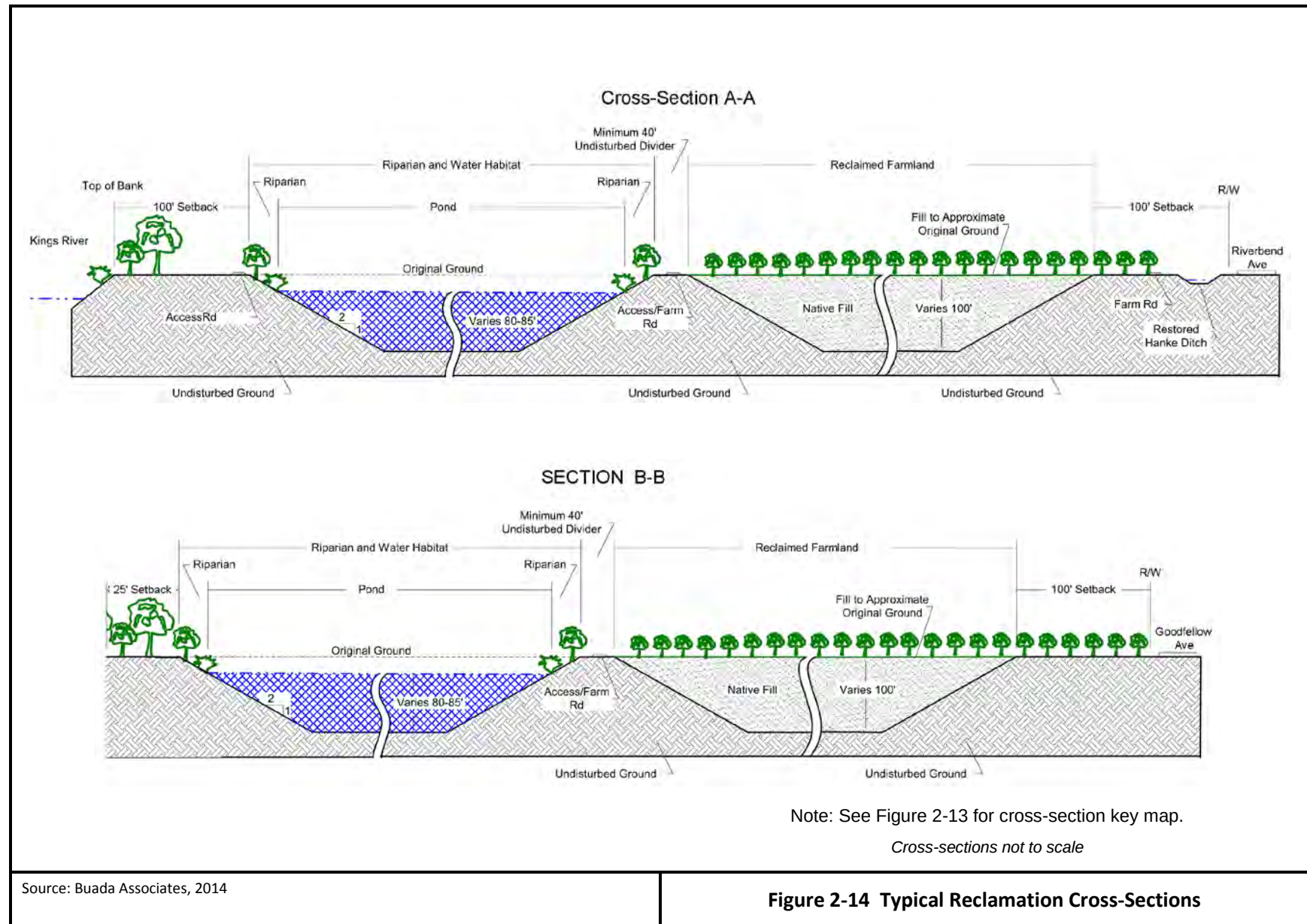
^{4.} To be used for portable plant during mining of Plant site (Phase 9)

Figure 2-13 shows the locations of the phases and Figure 2-14 provides a schematic of the reclamation cross sections.

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2.4.3 Overburden Removal and Soil Salvage Plan

2.4.3.1 Overburden

The overburden at the Project site is approximately 15 to 22 feet thick. Overburden would be removed from the area to be mined primarily by using wheel tractor-scrapers. The overburden would be used to construct the screening berms, to fill the phases to be reclaimed as farmland, to shape the pond edges of the excavated phases to be reclaimed to ponds and riparian habitat, or stored separately for later use in reclamation. Overburden removal would occur on an estimated annual equivalent of one month per year utilizing conventional scrapers.

2.4.3.2 Soil Salvage Plan

There is an approximately two feet thick layer of topsoil at the Project site. Topsoil would be removed as a separate layer from each phase. Wheel tractor-scrapers would be used to transport and spread the topsoil at previously excavated phases for use as the final cover for phases to be reclaimed to farmland and for the banks to be reclaimed as riparian habitat or stored separately for later use in reclamation. If conditions become more difficult or access constraints prevent the use of scrapers, a hydraulic excavator, bulldozer, or front-end loader and haul trucks may be used to remove topsoil. Under typical conditions, topsoil removal would take place approximately one year ahead of mining, therefore allowing agricultural use of the land to continue as long as possible. However, the Project may require topsoil sooner for construction of the vegetated visual/sound berms.

Topsoil that cannot be used right away would be stockpiled separately from subsoil overburden. Stockpiled topsoil would be planted with a vegetation cover or would be protected by other equally effective means if necessary to prevent water and wind erosion.

2.4.4 Revegetation Plan

A Revegetation Program and Guidelines have been prepared by a Revegetation Specialist and are provided in Appendix F of the Surface Mining and Reclamation Plan. The Guidelines would apply to the riparian areas surrounding the reclaimed open water ponds. The following is a summary of the Revegetation Guidelines.

2.4.4.1 Goals, Objectives and Performance Standards

Goals and Objectives

The goal of the Revegetation Program is to supplement natural native plant recolonization by creating natural self-sustaining plant communities or habitats using plant materials that are genetically and ecologically appropriate to the Project site. The Program objectives include: providing conditions that allow natural processes such as soil development, nutrient cycling, plant succession, natural regeneration and recovery from disturbance to occur; and within the open water areas, creating habitat for riparian associated species.

Performance Standards

Performance standards ensure that the revegetation effort meets the program goals and objectives. These standards include: (1) container/cutting survivability, (2) cover, (3) species richness or diversity, and (4) species density. Other attributes that evidence functioning habitats include native plant species' recruitment and wildlife usage.

2.4.4.2 Construction Sequence

Following completion of mining operations, the following typical sequence of revegetation activities would be undertaken:

- Recontouring of planting areas, if necessary;
- Control of invasive weeds;
- Placement of topsoil;
- Installation of temporary irrigation systems, if necessary;
- Installation of erosion control devices, if necessary;
- Planting and seeding;
- Maintenance and monitoring; and
- Reporting.

2.4.4.3 Preparation Activities**Reference Areas**

The areas to be reclaimed to native riparian habitat would be reclaimed to conditions that differ from the pre-mining conditions (e.g. agriculture). Consequently, the reference areas that would be used to characterize naturally occurring habitats would be the riparian areas adjacent to the Kings River.

The naturally occurring riparian areas would be examined for potential use as reference sites prior to the completion of mining in the area for the first pond. It is anticipated that mining would be completed in this area in approximately 10 years. Proposed revegetation standards, including plant palettes, plant densities and performance standards would be evaluated and revised as appropriate based on the reference areas at this time.

Test Plots

Based on knowledge of previous and on-going revegetation efforts of similar riparian sites near the Project site, test plots may not be necessary. Methods and plant species would be used that have been previously demonstrated most effective at achieving survival of plantings in the local area.

Site Preparation and Soils

Topsoils that have been salvaged, stockpiled and maintained would be used to backfill the revegetation areas. Prior to distributing the salvaged topsoil, it would be analyzed, in accordance with approved protocols, to determine if the growth potential is adequate. Standard soil fertility and agricultural suitability testing would be conducted. Soil testing would include testing the presence of elements toxic to plants, nutrient levels and percentage of organic matter. If necessary, soils would be amended with organic soil amendment/mulch and/or a slow-release organic fertilizer.

Prior to the initiation of revegetation, a Revegetation Specialist would establish and stake the limits of the planting areas. The areas to be revegetated would be cleared of weeds, trash and debris, and any eroded areas would be repaired.

2.4.4.4 Planting Methods**Timing**

Generally, all planting would occur between November 15 and January 15, or later depending on weather conditions, unless supplemental irrigation is provided. It is important to plant during this period because many of the plants are dormant and temperature and rainfall provide optimal conditions for germination and/or establishment.

Plant Materials

When feasible, propagules for shrub and tree container plants would be collected from appropriate native plants growing on the Project site or in the local area. The use of Project site specific materials increases the likelihood that revegetation would be successful and maintains the genetic integrity of the local ecosystem. If local propagules are not available or cannot be collected at least six months prior to fall planting, materials grown from other sources in the area may be substituted with the approval of the Revegetation Specialist.

Density

A density of an average of 2 trees per 150 feet of bank with periodic clustering of stands is proposed. This is considered favorable for the wildlife habitat and aesthetics.

Seeding

Seeding would follow installation of container planting. The proposed seed mix and seeding installation technique are provided in the Revegetation Plan. As with the other propagules, seeds would be collected from appropriate native species located adjacent to or in the general area of the Project site.

2.4.4.5 Post Construction Report

The Revegetation Specialist would prepare a post-construction report documenting revegetation activities, results, and any problems. As-built drawing would be prepared showing the final planting areas and total acreage.

2.4.4.6 Maintenance and Monitoring

Maintenance activities would begin at plant installation and continue until performance standards are met. These activities would include weed control, irrigation, replacement of dead trees or cuttings, etc. Monitoring would be initiated at installation and would be conducted until performance standards are met.

Monitoring would generally occur over a 5-year period or until performance standards are met whichever occurs first. Such monitoring would provide information for adaptive management of the system. Over time, as restored habitats mature, and more is learned about how the habitats respond to initial management actions, adjustments can be made to incorporate those activities that work best into the management plans. New information from ongoing research on special species could also lead to changes in management action.

Reports would be prepared and include such information as monitoring methods, general observations of vegetation development, maintenance activities, recommendations, photo documentation, and comparisons of the current year's findings with those of previous years.

2.4.4.7 Recordkeeping

Revegetation activities, maintenance work and the results of horticultural and any biological monitoring undertaken throughout each planting season would be summarized in reports to document compliance with the Reclamation Plan.

2.4.5 Water Features and Methods to Overcome Stagnation

Groundwater would flow into the ponds from the northeast since the groundwater gradient flow is from northeast to southwest. The phases to be filled and reclaimed as farmland and the phases to be reclaimed as open water and riparian habitat have been designed to leave a window about one-quarter mile wide perpendicular to the direction of groundwater flow where no fill would take place. Groundwater would be able to move downward and laterally beneath the fill, laterally around both sides of the fill (to the northwest and southeast), and through the window.

The ponds may be as deep as 100 feet. During the summer and winter, the water in fresh water ponds becomes stratified into different temperature layers, which don't mix. Twice a year, in the fall and spring, the waters at all layers of these ponds mix in overturns that equalize the temperatures at all depths. (*Living in the Environment*, G. Tyler-Miller, 1998). The seasonal vertical movement of water and the lateral groundwater movement preclude the occurrence of stagnation.

2.4.6 Statement of Responsibility

Prior to the excavation of any material from the Project site, a recordable agreement would be executed, binding upon successors, heirs or assigns, covenanting to perform all reclamation in the manner prescribed by the approved CUP and Mining and Reclamation Plan.

2.4.7 Financial Assurances

Reclamation of the Project site would be covered by financial assurances in accordance with the requirements of SMARA. The financial assurance estimate and the proposed financial assurance mechanism would be submitted to the County no later than 60 days prior to commencement of activities authorized in connection with the Project.

3.0 ENVIRONMENTAL IMPACT ANALYSIS

This section provides an explanation of the methods used for the DEIR impact analysis, identifies the environmental resource areas that have been analyzed in the DEIR, and the format and structure of each DEIR section.

3.0.1 Approach and Method to Environmental Impact Analysis

CEQA requires analysis of environmental impacts caused by a proposed project. The impact analysis evaluates, according to the applicable thresholds of significance, the change to the environmental baseline conditions resulting from implementing the Project. CEQA Guidelines Section 15126.2(a) states:

An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

The specific approaches and methodologies used for analyzing the Project's impacts are discussed with respect to each environmental topic addressed in this section. In general, the approach for the resource analyses consisted of determining existing conditions at the Project site and surrounding areas, and considering the changes that would occur as a result of the Project implementation. The analyses utilize information from a variety of sources including existing literature, field studies, and technical reports prepared for the Project.

3.0.2 Environmental Resource Areas Analyzed

The resources areas analyzed in this DEIR include the following:

- Aesthetics (Sec. 3.1)
- Agriculture and Forestry Resources (Sec. 3.2)
- Air Quality (Sec. 3.3)
- Biological Resources (Sec. 3.4)
- Cultural Resources (Sec. 3.5)
- Geology and Soils (Sec. 3.6)
- Greenhouse Gas Emissions/Climate Change (Sec. 3.7)
- Hazards and Hazardous Materials (Sec. 3.8)
- Hydrology and Water Quality (Sec. 3.9)
- Land Use and Planning (Sec. 3.10)
- Noise and Vibration (Sec. 3.11)
- Transportation and Traffic (Sec. 3.12)

3.0.3 Format Used for Topical Environmental Impact Analysis

Each topical environmental issue section (Sections 3.1 through 3.12) is organized according to the following outline:

3.X Name of Topical Environmental Issue

3.X.1 Introduction

3.X.2 Environmental Setting

3.X.2.1 Regional Setting

3.X.2.2 Vicinity Setting

3.X.2.3 Project Site Setting

3.X.3 Regulatory Setting

3.X.3.1 Federal

3.X.3.2 State

3.X.3.3 Local

3.X.4 Significance Thresholds

3.X.4.1 Appendix G Thresholds from the State CEQA Guidelines

3.X.4.2 Additional Thresholds of Significance (if applicable)

3.X.5 Methodology of Analysis

3.X.6 Project-Level Impacts and Mitigation Measures

3.X.6.1 Issues Found To Have No Impacts

3.X.6.2 Impact 1

Impact Statement

Impact Analysis

Level of Significance Before Mitigation

Mitigation Measures

Level of Significance After Mitigation

3.X.7 Cumulative-Level Impacts and Mitigation Measures

3.X.8 Alternatives to Significant Effects

The general contents of the sections are provided below.

3.X.1 - Introduction identifies the purpose of the particular evaluation being conducted in each section and sources used in support of the environmental impact analysis.

3.X.2 - Environmental Setting describes the existing on-site physical environmental conditions of the Project site existing at the time the NOP was published, and which constitutes the baseline physical conditions that assist in determining whether an impact is significant. This section also describes the regional, vicinity, and Project site settings.

3.X.3 - Regulatory Setting identifies Federal, State, and local regulations that are applicable or potentially applicable to the particular resource area under consideration.

3.X.4 - Significance Thresholds identifies thresholds from Appendix G of the CEQA Guidelines and other thresholds found applicable by the County that assist in a determination of whether a particular impact is significant.

3.X.5 - Methodology of Analysis describes the method used for evaluating the Project's potential environmental impacts.

3.X.6 -Project-Level Impacts and Mitigation Measures analyzes each significance threshold beginning with those areas where there is no impact and addressing other impacts thereafter according to the following sub-headings:

3.X.6.1 – Issues Found to Have No Impact describes those issues included in the listing of thresholds of significance, with respect to which the Project was determined to result in no impact. Reasons for this no impact determination are also provided in this section.

3.X.6.2 – Impact 1

Impact Statement - concisely describes the potential impact. Impact statements are sequentially identified within the resource area using an alpha-numeric system. For example, the first impact statement within the Aesthetics section (Section 3.1) would be identified as Impact AES-1.

Impact Analysis - describes environmental changes to the existing conditions that may occur if the Project were to be implemented.

Level of Significance Before Mitigation - describes the level of significance before a recommended mitigation measure would be implemented, where applicable.

Mitigation Measures - identifies those specific measures that would be necessary to: 1) avoid an impact entirely by not taking a certain action or parts of an action, 2) minimize impacts by limiting the degree of the action and its implementation, 3) rectify an impact by repairing, rehabilitating, or restoring the impacted environment, 4) reduce or eliminate an impact over time by preservation and maintenance operations during the life of the action, or 5) compensate for the impact by replacing or providing substitute resources or environments.

Mitigation measures are associated with their respective impact statement. For example, a mitigation measure associated with Impact AES-1 (as described above) would be identified as MM AES-1.

Level of Significance After Mitigation - describes the level of impact significance remaining after mitigation measures have been implemented, where applicable.

3.X.7 - Cumulative-Level Impacts and Mitigation Measures, as distinguished from Project-level analysis, analyzes the potential impacts to the environment that would result from combining Project-level impacts with related projects. Cumulative impacts are also discussed in Section 5.1.

3.X.8 - Alternatives to Significant Effects identifies alternatives that would avoid or substantially lessen significant environmental effects. The alternatives analysis is summarized in Section 4.0.

3.0.4 Related Projects Used for Cumulative Impact Analysis

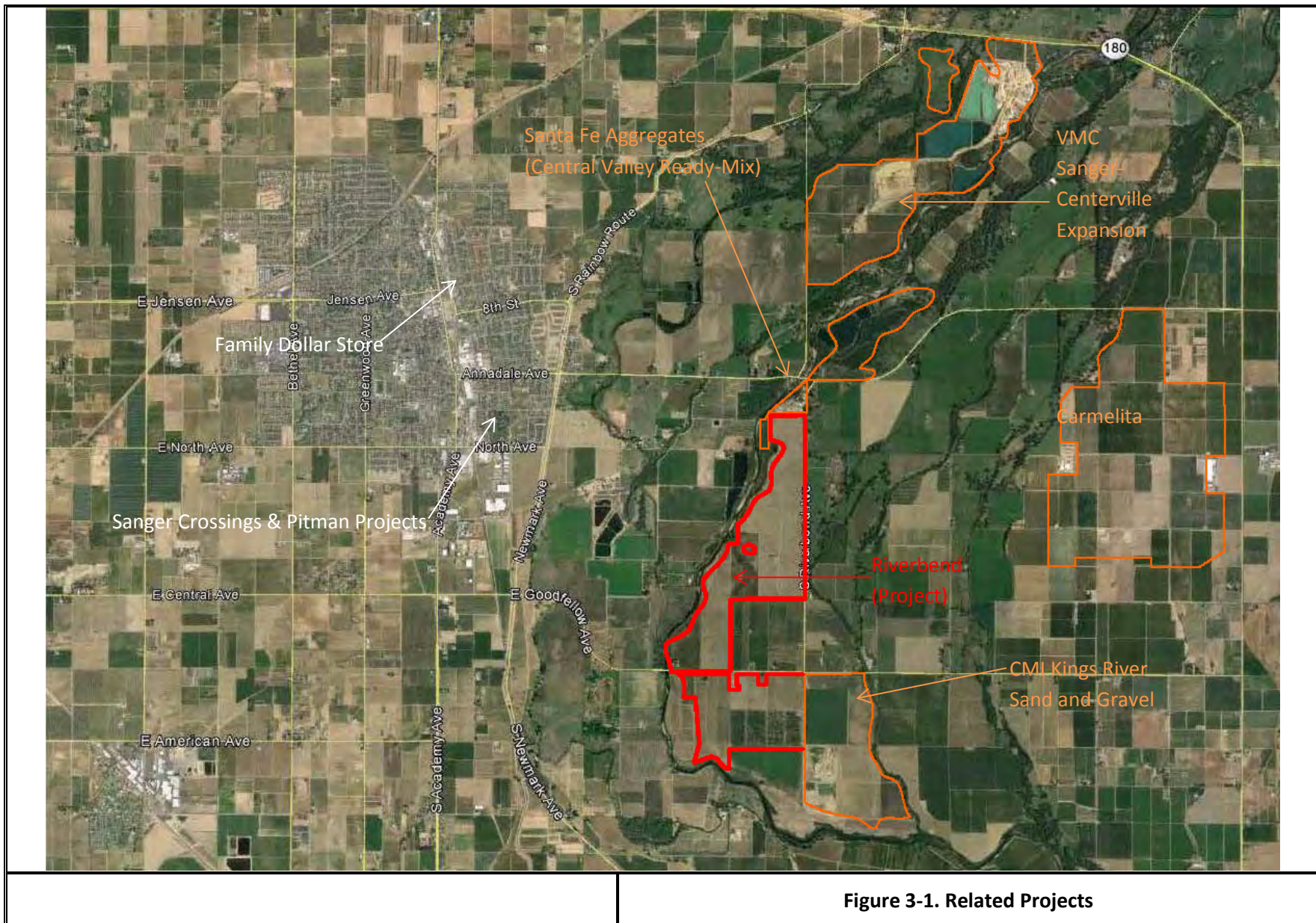
The County provided a list of currently and reasonably foreseeable projects that could result in cumulative impacts for the resource areas affected by the Project. Table 3-1 identifies these projects and provides a brief summary and status for each one. The potential cumulative impacts associated with these projects are discussed in the following impact evaluations (Sections 3-1 through 3-12) and summarized in Section 5.1.

The Jesse Morrow Mountain project was not included in the cumulative impact analysis because the conditional use permit entitlement was denied and there is no longer a proposed project. Moreover, Fresno County and the project applicant (Cemex) agreed, at a December 2012 Fresno County Board of Supervisors meeting, to record a deed restriction preventing mining on the site. The deed restriction was recorded on January 4, 2013.

Table 3-1. Cumulative Projects

Map ID	Project Name and Lead Agency	Land Use Type	Description	Status
MINING AND RELATED PROJECTS				
1	Carmelita Mine and Reclamation Project Fresno County	Aggregate Surface Mine	Aggregate surface mine and related processing plants. Property: 1,500 acres Mining: 898 acres Mining Phases: Twenty-two (mining cells) Number of Daily Vehicle Trips: 1,420 at Build-Out Annual Sales Rates: 1.25 million tons-per-year Processing Plants: Aggregate, Asphalt, Ready-Mix, and Recycle Entitlement: Conditional Use Permit Agricultural land converted: 583 acres	Project is approved but. operations have not yet commenced.
2	Sanger-Centerville Aggregate Operations Expansion (Vulcan Materials) Fresno County	Aggregate Surface Mine	Aggregate surface mine and related processing plants. Property: 660 acres Mining: Increase from 220 acres to 440 acres Mining Phases: Increase from seven original phases with seven new phases Number of Daily Vehicle Trips: Increase from 424 to 957 Annual Sales Rates: Increase from 1.0 to 2.50 million tons-per-year Processing Plants: Add a second Ready-Mix Plant Entitlement: Modification to Conditional Use Permit Agricultural land converted: 424 acres	Approved and existing operation. In 2007, the existing Conditional Use Permit was modified to allow an expansion of the mining area and the addition of a ready-mix plant.
3	Kings River Sand and Gravel (CMI) Fresno County	Aggregate Surface Mine	Aggregate surface mine and related processing plants. Property: 457 acres Mining: 315 acres Mining Phases: Nine Number of Daily Vehicle Trips: 386 average (462 peak season) Annual Sales Rates: 1.00 million tons-per-year Processing Plants: Aggregate, Ready-Mix Entitlement: Conditional Use Permit Agricultural land converted: 315 acres	Approved and existing operation.

Map ID	Project Name and Lead Agency	Land Use Type	Description	Status
4	Santa Fe Aggregates (Central Valley Ready-Mix) Fresno County	Aggregate Surface Mine and Concrete Ready-Mix Plant	Aggregate surface mine and Concrete Ready-Mix Plant. Property: 209 acres Mining: 100 acres Mining Phases: Six Number of Daily Vehicle Trips: not available Annual Sales Rates: not available Processing Plants: Concrete Ready-Mix, occasional use of Portable Aggregate Entitlement: Conditional Use Permit Agricultural land converted: 100 acres	Existing operation. As of 2006, portions of Phases 1 and 2, and all of Phase 6 had not been mined. The existing CUP will expire in 2015 but an application has been submitted to extend the CUP through 2030.
NON-MINING PROJECTS				
5	Sanger Crossings Apartments City of Sanger	Residential Building	New 81-unit affordable apartment housing project.	Entitlement phase.
6	Pitman Farms Expansion City of Sanger	Poultry Processing Facility	Four-acre parking lot expansion to provide on-site employee parking and an ingress/egress for trucks.	Entitlement phase.
7	Family Dollar Store City of Sanger	Retail Store	New 9,200 sq ft retail store.	Entitlement phase.
Source: County of Fresno, Department of Public Works and Planning Development Services Division, and City of Sanger, Planning, Community & Economic Development Department.				

**Figure 3-1. Related Projects**

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3.1 AESTHETICS

3.1.1 Introduction

This section of the DEIR describes the existing visual resources of the Project site and discusses the impact associated with implementation of the Project. Scenery (aesthetics) is a manageable resource, and the visual importance given to the landscape is influenced by multiple factors, including existing conditions, duration, distances and the viewer's intention. Systematic approaches have been developed to compare the value of scenic resources to other land uses and resources. The following analysis has primarily used the approved visual assessment practices employed by the Bureau of Land Management (BLM).

The primary sources used in this analysis were the Visual Impact Assessment (VIA) prepared for the Project, the BLM "Visual Resource Management Manual", the US Department of Transportation "Visual Impact Assessment for Highway Projects" and the Fresno County General Plan Open Space and Conservation Element. The VIA is provided in Appendix C.

3.1.2 Environmental Setting

3.1.2.1 Regional Setting

As described in Section 2.0, the Project site is located in the San Joaquin Valley, which is a region dominated by agriculture (49 percent of the county's land use) and resource conservation, including public forestland and mountainous regions in the eastern county areas. The region sits at the western foothills of the Sierra Nevada mountain range, and the mountain peaks of Jesse Morrow and Campbell Mountain and the Sierra Nevada mountain range comprise the background views in the region.

3.1.2.2 Vicinity Setting

The Project site is located 1.5 miles southeast of urbanized areas in the City of Sanger, approximately 5.75 miles northwest of the City of Reedley, and 9 miles south of Fresno. Fresno has a steadily growing population, totaling over 930,000 at the time of the 2010 census. The surrounding zoning designations are predominantly agricultural in nature, similar to the Project site, and Open Conservation. The Kings River is located within the Open Conservation zoning district adjacent to the Project. The Kings River is a dominant feature in the vicinity and Project site setting. Existing and approved mining activities near the Kings River occur within the same zoning district as the Project.

The majority of surrounding land uses (Figure 2-3) within the Project vicinity consist of large-lot, low-density rural residences, ranches, agriculture and farms. Several large-lot rural residences are located along the perimeter of the Project site, particularly across Riverbend Avenue along the Project's eastern boundary.

State Route 180 (SR 180) is located approximately 3 miles north of the Project site. SR 180 is a Fresno County Designated Scenic Roadway. An application to officially designate SR 180 as a State Scenic Highway is in process. Section 3.1.3.2 describes the California Scenic Highway Program.

3.1.2.3 Project Site Setting

The Project is located both north and south of Goodfellow Avenue between the Kings River on the west and Riverbend Avenue on the east in Fresno County. The 619 acre Project site is within an 833 acre property. The remainder of the property, including all of the existing riparian habitat along the Kings River, is excluded from the Project.

The topography of the Project site and surrounding properties is essentially flat. The Project site is currently occupied by agriculture, including orchard tree crops and vineyards. These orchards and vineyards are consistent with the visual character of the surrounding landscape and fit the overall rural farming environment of the region. Large stretches of mature oak woodland and willow riparian habitat are present along the banks of the Kings River, which borders the Project site.

3.1.3 Regulatory Setting

3.1.3.1 Federal

There are no Federal regulations applicable to the Project.

3.1.3.2 State

State Scenic Highway Program

The State of California officially designates State scenic highways through the “California Scenic Highway Program,” which is managed by Caltrans. A highway may be designated “scenic” depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler’s enjoyment of the view. In addition, highways may be identified as “candidate,” pending official designation. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et. seq. A list of state scenic highways is found in Street and Highway Code, Section 263.

3.1.3.3 Local

Fresno County General Plan Open Space and Conservation Element

The Open Space and Conservation Element of the Fresno County General Plan includes the following relevant policies that pertain to the management of potential visual impacts to scenic quality:

Goal OS-K: To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.

Policy OS-K.1: The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas whenever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.

Policy OS-K.2: The County shall identify and map significant scenic resources within the County and shall develop a program to manage these resources.

Policy OS-K.3: The County should preserve areas of natural scenic beauty and provide for public access to scenic vistas by purchasing sites for park use.

Policy OS-K.4: The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.

Goal OS-L.1: To conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in the County.

Policy OS-L.1: The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways.

Policy OS-L.3: The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles:

- a. Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way;
- b. Installation of signs visible from the right-of-way shall be limited to business identification signs, on-site real estate signs, and traffic control signs necessary to maintain safe traffic conditions. All billboards and other advertising structures shall be prohibited from location within view of the right-of-way;
- c. Intensive land development proposals including, but not limited to, subdivisions of more than four lots, commercial developments, and mobile home parks shall be designed to blend into the natural landscape and minimize visual scarring of vegetation and terrain. The design of said development proposals shall also provide for maintenance of a natural open space area two hundred (200) feet in depth parallel to the right-of-way. Modification of the setback requirement may be appropriate when any one of the following conditions exist:
 1. Topographic or vegetative characteristics preclude such a setback;
 2. Topographic or vegetative characteristics provide screening of buildings and parking areas from the right-of-way;
 3. Property dimensions preclude such a setback; or
 4. Development proposal involves expansion of an existing facility of an existing concentration of uses.
- d. Developments involving concentration of commercial uses shall be designed to function as an integral unit with common parking areas and right-of-way access drives; and
- e. Outside storage areas associated with commercial activities shall be completely screened from view of the right-of-way with landscape plantings or artificial screens which harmonize with the natural landscape.

Policy OS-L.4: The County shall require new development along designated scenic roadways within urban areas and unincorporated communities to underground utility lines on and adjacent to the site of the development or, when this is infeasible, to contribute their fair share of funding for future undergrounding.

3.1.4 Significance Thresholds

3.1.4.1 Appendix G Thresholds from the State CEQA Guidelines

Appendix G of the CEQA Guidelines contains a checklist of environmental effects that may be considered significant. Under the category of “Aesthetics,” a project is considered to have a significant visual impact on the environment if it would:

- a) *Have a substantial adverse effect on a scenic vista;*
- b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;*
- c) *Substantially degrade the existing visual character or quality of the site and its surroundings; or*
- d) *Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.*

3.1.4.2 Additional Thresholds of Significance

The Fresno County General Plan “Open Space and Conservation Element” (Sections K and L) contain policies relating to scenic resources. These County’s policies have been reviewed and are considered to be addressed by the significance criteria identified above. There are no additional thresholds related to the Project’s visual impacts.

3.1.5 Methodology of Analysis

The following analysis is based on the VIA prepared by RGP (RGP Planning & Development Services, 2012), review of applicable Federal, State and local requirements, Project design features, BMPs, operating practices, and other environmental protection measures that have been incorporated into the Project to minimize potential impacts on the environment, review of the environmental evaluation of similar projects in the area and comments received during the scoping process. A copy of the Scoping Report which includes all the comment letters is provided in Appendix A.

The methodology is based on the BLM visual impact assessment procedures provided in the “Visual Resources Management (VRM) Manual” Section 8400 (Bureau of Land Management, 1984). The BLM system uses quantitative and qualitative methods to measure potential visual impacts. This method includes defining the Project setting and viewshed, identifying sensitive view receptors for assessment, analyzing the baseline visual quality and character of the identified views, depicting the visual appearance of the Project from the identified views, assessing the Project’s impacts to those views in comparison to their baseline visual quality and character, and proposing methods to mitigate any potentially significant visual impacts identified.

Field surveys were conducted for the VIA on June 6, 2012. The VIA took into account the design features of the Project that would be used to minimize the potential impacts to aesthetics. These are described in Section 2.3.17 of the Project Description and summarized in this section.

The following provides a description of the key aspects of the VRM methodology and how they were used in the VIA for the Project.

Rating Visual Quality

“Visual quality” is a measure of a landscape or a view’s visual appeal. While there are a number of standardized methods for rating visual quality, the “Scenic Quality Rating Criteria” method utilized by the BLM (refer to Table 3.1-1) is believed to be superior because it allows the various landscape elements that comprise visual quality to be easily quantified and rated, with a minimum of ambiguity or subjectivity.

According to this method, visual quality is rated according to the presence and characteristics of seven key components of the landscape. These components include landform, vegetation, water, color, adjacent scenery, scarcity and cultural modifications.

1. The “landform” component of the visual quality rating criteria takes into account the fact that topography becomes more interesting visually as it gets steeper or more massive, or more severely or universally sculptured. Outstanding landforms may be monumental, (as found in Yosemite Valley), or they may be exceedingly artistic and subtle (such as certain badlands, pinnacles, arches, and other extraordinary formations).
2. The “vegetation” component of the rating criteria gives primary consideration to the variety of patterns, forms, and textures created by plant life. Short-lived displays are given consideration when they are known to be recurring or spectacular. Consideration is also given to smaller scale vegetational features that add striking and intriguing detail elements to the landscape (e.g., gnarled or windbeaten trees, Joshua trees, etc.).
3. The “water” component of the rating criteria recognizes that visual quality is largely tied to the presence of water in scenery, as it is that ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score for the water component.
4. The “color” component of the visual quality rating criteria considers the overall color(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.). Key factors that are used when rating the color of scenery are variety, contrast, and harmony.

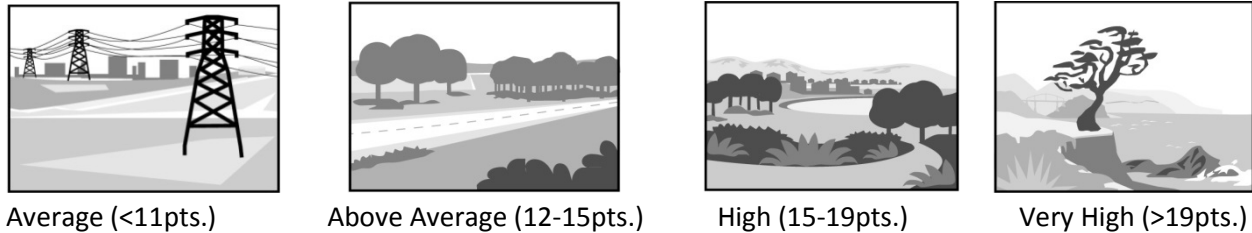
5. The “adjacent scenery” component of the rating criteria takes into account the degree to which scenery outside the view being rated enhances the overall impression of the scenery under evaluation. The distance of influence for adjacent scenery normally ranges from 0-5 miles, depending upon the characteristics of the topography, the vegetation cover, and other such factors. This factor is generally applied to views that would normally rate very low in score, but the influence of the adjacent high visual quality would enhance the visual quality and raise the score.
6. The “scarcity” component of the visual quality rating criteria provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique or rare within a region. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often, it is a number of not so spectacular elements in the proper combination that produces the most pleasing and memorable scenery – the scarcity factor can be used to recognize this type of area and give it the added emphasis it should have.
7. The “cultural modifications” component of the visual quality rating criteria takes into account any man-made modifications to the landform, water, vegetation, and/or the addition of man-made structures. Depending on their character, these cultural modifications may detract from the scenery in the form of a negative intrusion or they may complement and improve the scenic quality of a view.

See Figure 3.1-1 below for examples of the point values associated with the various criteria.

Table 3.1-1 BLM Visual Resources Rating Criteria

Key Factors	Rating Criteria and Score		
1. LANDFORM	High vertical relief as expressed in prominent cliffs, spires, or massive rock outcrops, or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers.	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detail features which are interesting though not dominant or exceptional.	Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features.
	Score = 5	Score = 3	Score = 1

Key Factors	Rating Criteria and Score		
2. VEGETATION	A variety of vegetative types as expressed in interesting forms, textures, and patterns. Score = 5	Some variety of vegetation, but only one or two major types. Score = 3	Little or no variety or contrast in vegetation. Score = 1
3. WATER	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape. Score = 5	Flowing, or still, but not dominant in the landscape. Score = 3	Absent, or present but not noticeable. Score = 1
4. COLOR	Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water or snow fields. Score = 5	Some intensity or variety in colors and contrast of the soil, rock, and vegetation, but not a dominant scenic element. Score = 3	Subtle color variations, contrast, or interest; generally mute tones. Score = 1
5. INFLUENCE OF ADJACENT SCENERY	Adjacent scenery greatly enhances visual quality. Score = 5	Adjacent scenery moderately enhances overall visual quality. Score = 3	Adjacent scenery has little or no influence on overall visual quality. Score = 1
6. SCARCITY	One of a kind; or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc. Score = 5	Distinctive, though somewhat similar to others within the region. Score = 3	Interesting within its setting but fairly common within the region. Score = 1
7. CULTURAL MODIFICATIONS	Modifications add favorably to visual variety while promoting visual harmony. Score = 2	Modifications add little or no visual variety to the area, and introducing no discordant elements. Score = 0	Modifications add variety but are very discordant and promote strong disharmony. Score = -4

Figure 3.1-1. Examples of Various Visual Quality Ratings

Based on the above criteria, views can be rated numerically and a total score of visual quality can be tabulated. Based on the BLM's rating system, there are a total of 32 points possible. Views that score a total of 19 points or more are typically considered very high in visual quality. Views that score a total of 15 to 19 points are typically considered to have a high level of visual quality. Views that score a total of 12 to 15 points are typically considered to have an above average level of visual quality. Views that score a total of 11 points or less are typically considered to have average visual quality.

An important premise of this evaluation method is that views with the most variety and most harmonious composition have the greatest scenic value. Another important concept is that man-made features within a landscape do not necessarily detract from the scenic value. In fact, certain man-made features which complement the natural landscape may actually enhance the visual quality. In making this determination, it is therefore important to assess a project's effects relative to the "visual character" of the project setting. Visual character is qualitatively defined by four primary components: form, line, color and texture.

Generally speaking, projects that create a high level of contrast to the existing visual character of a project setting are more likely to generate adverse visual impacts due to visual incompatibility. Conversely, projects that create a low level of contrast to the existing visual character are less likely to generate adverse visual impacts due to inherent visual compatibility. On this basis, project modifications are quantified and evaluated for impact assessment purposes.

By comparing the difference in visual quality ratings from the baseline ("before" condition) to post-project ("after" condition) visual conditions, the severity of project related visual impacts can be quantified. However, in some cases, visual changes caused by projects may actually have a beneficial visual effect and may enhance scenic quality.

Project Viewpoints

The Project viewshed was mapped in the field by RGP staff on June 6, 2012 (RGP was acquired by Sespe in 2013). The atmospheric conditions were clear, calm and sunny, representing the conditions under which the highest level of Project visibility would occur.

The Project viewshed was established by determining the surrounding areas within a 1-mile radius from the Project perimeter that would have an unobstructed or partial line-of-sight to the Project. The Project region is flat and includes large groves of tall trees and vegetation, such as oak woodland and orchards. For this reason, the Project viewshed is generally limited to the areas that are located immediately around the perimeter of the Project site, as shown in Figure 3.1-2.

Based on the CEQA Guidelines and the Fresno County General Plan policies, the types of sensitive viewpoints that were sought out for further impact assessment included any scenic vistas, scenic highways, residential viewers, and public parks and/or recreational facilities that are located within the Project viewshed. Each of these land uses are considered to have high visual sensitivity. A “scenic vista” is defined as an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing.

Project Design Features, BMPs and Environmental Protection and Minimization Measures

As discussed above and in Section 2.3.17, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project to minimize potential impacts on the environment. Figures 2-7 and 2-9 provide the location and types of setbacks and visual screens that would be part of the Project. The following identifies some of the environmental protection measures that were considered during this evaluation:

- A 10-foot high berm would be constructed along the west side of the Plant site.
- No excavation of material or overburden would take place within one hundred (100) feet from the public right-of-way and within twenty-five (25) feet from other property lines.
- Except for vegetated berms established for the purpose of visual screening and/or noise attenuation, no stockpiled soil or material would be placed closer than twenty-five (25) feet from a property boundary.
- Prior to mining within 900 feet of residences along Riverbend Avenue, a 10-foot high berm would be constructed near the western edge of the proposed 100-foot excavation setback.
- Prior to mining within 900 feet of the residence north of Phases 6A and 6B across Goodfellow Avenue, an 8-foot tall berm would be constructed near the southern edge of the proposed 100-foot excavation setback along the south side of Goodfellow from Riverbend Avenue to 2,000 feet west of Riverbend Avenue.
- Berms along Riverbend and Goodfellow would be constructed prior to removal of overburden in the area of the phases within 900 feet of the nearest residence(s).
- Operations would occur primarily during daylight hours. Operations during the time of year when daylight hours are shorter, or for any nighttime operations, would require lighting to provide a safe operating environment. For nighttime lighting, high pressure sodium and/or cut-off fixtures (or equivalent IDA-approved fixtures) would be used instead of mercury-vapor fixtures for any required nighttime lighting of the dragline and the processing facilities. The

lighting would also be designed to confine illumination to the Project site, and/or to areas that do not include light-sensitive uses.

Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

If materials from Phases 6A, 6B and 7 were to be processed at the CUP 3052 plant (Section 2.3.15.7), the relocation of a conveyor within the Project site would not create any different or additional effects on the visual resources associated with the Project.

3.1.6 Project-Level Impacts and Mitigation Measures

3.1.6.1 Issues Found to Have No Impact

The following CEQA thresholds were evaluated and it was determined that the Project would have no impact; therefore, these potential effects do not need to be considered further.

*a) **Would the Project have a substantial adverse effect on a scenic vista?***

There are no designated scenic vistas located within the Project viewshed. Therefore no impacts to scenic vistas would result.

*b) **Would the Project substantially damage scenic resources, including but not limited to trees, rock, outcroppings and historic buildings within a state scenic highway?***

In accordance with the California Scenic Highway Program (Section 3.1.3.2), the Caltrans Scenic Highway Coordinators maintain a list of highways that are either eligible for designation as scenic highways or have already been designated. This list is available on the California Scenic Highway Program website. According to the list, which was accessed on April 28, 2014, there are no designated or eligible state scenic highways located within the Project viewshed. According to County maps, the Project site is also not located along the "Fresno County Blossom Trail" - a locally important scenic drive. In addition, the Project site is not located along a Designated Landscape Drive or Designated Scenic Drive. The Kings River Regional Plan (KRRP) does not contain any Designated Landscape Drives with the KRRP boundary. The KRRP does contain two Designated Scenic Drives; however, neither is along the Project site. The Project site is not visible from SR 180, a Fresno County Designated Scenic Roadway. Therefore, no impacts to scenic highways would result from the Project.

3.1.6.2 Visual Character

Impact Statement

Impact AES-1: Would the Project substantially degrade the existing visual character or quality of the site and its surroundings? **(CEQA Guidelines Threshold Criteria (c))**

Impact Analysis

The Project may be visible from portions of the Kings River, which would be considered a sensitive viewpoint because of its proximity to the Project site and its potential use for public recreation (e.g.: summer rafting activities). Furthermore, there are several rural residences located adjacent to the Project site, from which the Project may be visible. Therefore, the potentially sensitive Project viewpoints include following categories:

Potentially Sensitive Viewpoints:

1. Views from the Kings River, located west and south of the site;
2. Views from residences, located near the site.
3. Views from adjacent roads.

The locations of these potentially sensitive viewpoints are illustrated on Figure 3.1-2.

Views from the Kings River

Views of the Project site from the Kings River range from non-existent to a narrow glimpse of the westernmost edge of the Project site due to the presence of mature oak woodland and riparian vegetation that naturally occur along the banks of the river. This riparian area along the river is not included in the Project and will remain as a natural buffer to the Project site. The Project would be setback 100 feet from the top of the Kings River bank; 50 feet from the regulated or designated floodway; or 50 feet from the dripline of riparian vegetation or mature oak trees, or whichever is greater. View opportunities from the river would also be limited by the fact that the elevation of the river is at least five to six feet below the grade of the Project site. Consequently, there would not be a clear line-of-sight to the entire property from the river, and views of the Project site would mostly be limited to the orchards and vineyards that are located immediately adjacent to the bank of the river. Figure 3.1-3 shows the existing view of the Project site from the river, which has been rated at 20 points according to the visual quality rating criteria.

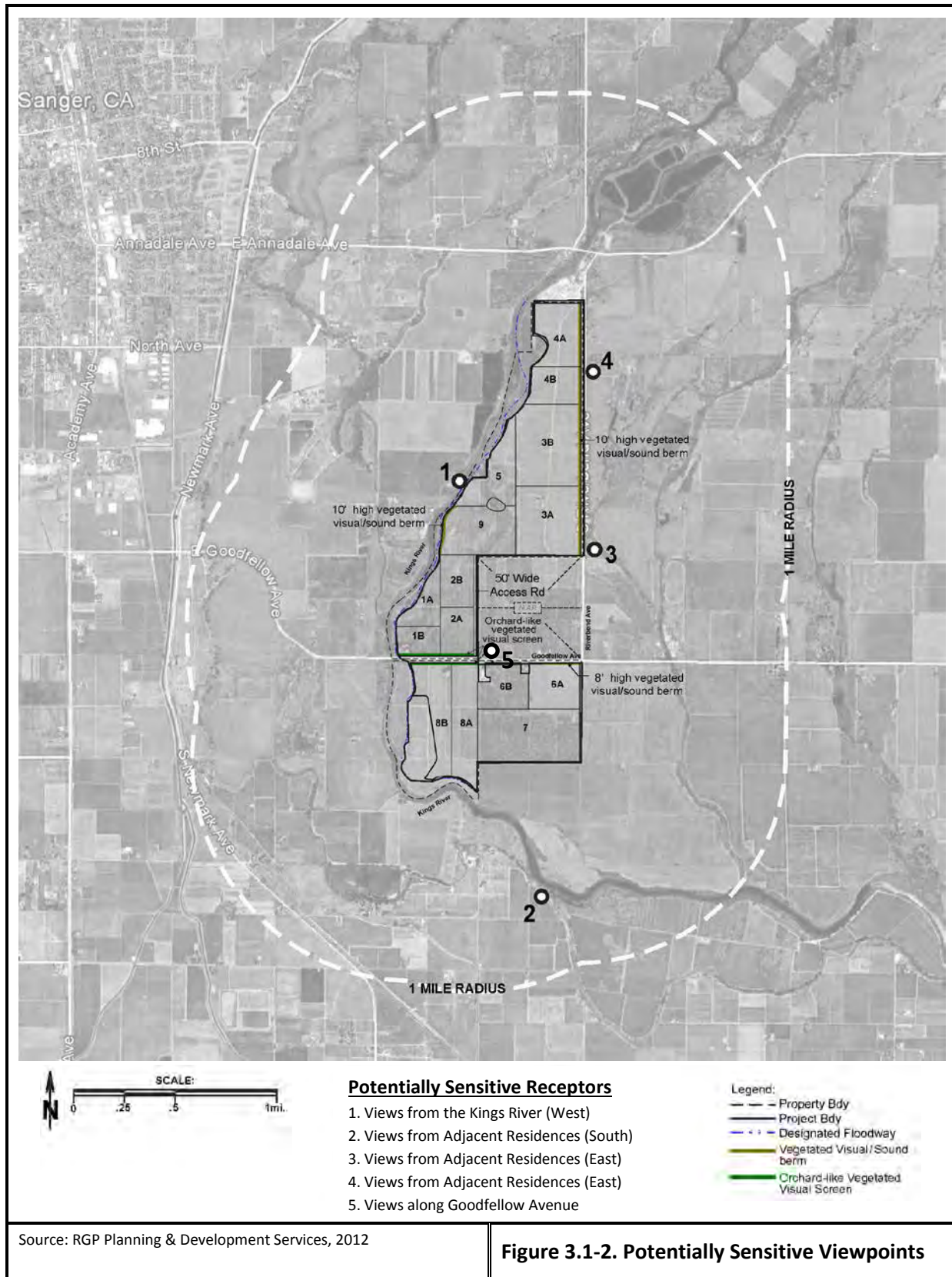


Figure 3.1-2. Potentially Sensitive Viewpoints



Existing views from the Kings River

Key Factors	RATING CRITERIA SCORE
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adacent Scenery	3
Scarcity	4
Cultural Modifications	0
Total Score	20



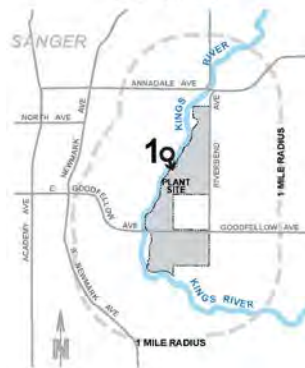
Operational phase views from the Kings River

Key Factors	RATING CRITERIA SCORE
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adacent Scenery	3
Scarcity	4
Cultural Modifications	-1
Total Score	19



Final reclaimed views from the Kings River

Key Factors	RATING CRITERIA SCORE
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adacent Scenery	3
Scarcity	4
Cultural Modifications	0
Total Score	20

LOCATION 1

Source: RGP Planning & Development Services, 2012

Figure 3.1-3. Views from West of the Site at Kings River

Operational Phase: As shown in the operational phase simulation on Figure 3.1-3, the Project would install a vegetated berm to screen views of the Plant site along the river. However, due to the height of the dragline it would be visible at times from the Kings River because it is too tall to be entirely screened from view. A potential worst-case view of this condition is simulated in Figure 3.1-3.

The visual character of the potentially visible portions of the dragline contrasts with the natural form, line and texture of the surrounding environment. Nonetheless, this impact would not cause a dominant and/or permanent change in the visual quality of the area. The dragline would be visible only during mining of the phases nearest the river. Furthermore, the dragline would move throughout the site as the various phases are being completed. The worst-case view scenario depicted in Figure 3.1-3 would occur during excavations in the westernmost mining phases. For these reasons, 1 point has been deducted from the cultural modifications score, to account for periodic visibility of the dragline. The resulting visual quality score for the operational phase view is 19 points. This visual impact is considered less than significant.

Reclamation Phase: During the reclamation phase, the Project's long-term visual changes include its proposal to reclaim the Project site to agriculture, open space, native habitat and a series of ponds. Because these land uses are compatible with the surrounding visual character, the resulting reclamation phase visual quality score has been rated at 20 points. Therefore, the long-term visual impacts to views from the Kings River are considered less than significant.

Views from Residence to the South of Project Site

One residence that is across the river, just southeast of the southern portion of the Project site, is located within the potential viewshed of the Project. Since the residence is located on property that is elevated above the Project site, its views have been assessed for potential impacts. Figure 3.1-4 demonstrates the existing view of the Project site from this location, and the existing view has been rated at 19 points according to the visual quality rating criteria.

Operational Phase: As shown in the operational phase simulation on Figure 3.1-4, the Project activities would not be visible at this location because of the height and density of the oak woodland, riparian vegetation and non-native landscape trees that already provide a natural visual screen between the residence and the Project site. For this reason, no additional points have been deducted from the cultural modifications score of the visual quality rating for the operation phase view. The view remains at 19 points, and this visual impact is considered less than significant.



Existing views from local residences

Key Factors	RATING CRITERIA SCORE
Landform	2
Vegetation	4
Water	3
Color	3
Influence of Adacent Scenery	3
Scarcity	4
Cultural Modifications	0
Total Score	19



Operational phase views from local residences (no changes to view anticipated)

Key Factors	RATING CRITERIA SCORE
Landform	2
Vegetation	4
Water	3
Color	3
Influence of Adacent Scenery	3
Scarcity	4
Cultural Modifications	0
Total Score	19



Final reclaimed views from local residences (no changes to view anticipated)

Key Factors	RATING CRITERIA SCORE
Landform	2
Vegetation	4
Water	3
Color	3
Influence of Adacent Scenery	3
Scarcity	4
Cultural Modifications	0
Total Score	19



Source: RGP Planning & Development Services, 2012

Figure 3.1-4. Views from Residences South of the Site

Reclamation Phase: As shown in the reclamation phase simulation on Figure 3.1-4, the Project activities would again not be visible at this location because of the height and density of the oak woodland, riparian vegetation and non-native landscape trees that already provide a natural visual screen between the residence and the Project site. Therefore, no additional points have been deducted from the cultural modifications score of the visual quality rating for the reclamation phase view. The view remains at 19 points, and this visual impact is considered less than significant.

Views from Residences to the East of Site

Approximately seven residences are located east of the Project site across Riverbend Avenue, each of which could have potential views of the Project. Unlike the Kings River view, which is located below the elevation of the site, and the view from residence to the south, which is slightly elevated above the site, these homes are essentially located at the same elevation as the Project site. In order to better assess potential impacts to their views, two separate Project simulations have been conducted. Figure 3.1-5 shows visual simulations for homes near the south portion of the site, and Figure 3.1-6 shows visual simulations of the Project views for homes near the northern portion of the site. In both cases, the existing views have been rated at 12 points using the visual quality rating criteria.

Operational Phase: As shown in the operational phase simulations in Figure 3.1-5 and Figure 3.1-6, the Project would install a vegetated berm to screen views of the majority of the operation. However, due to the height of the dragline it would be visible at times during work in the easternmost phases because it is too tall to be entirely screened from view. A potential worst-case view of this condition is simulated in Figure 3.1-5 and Figure 3.1-6. (Please note: Multiple draglines are shown in the simulated views. Realistically, only one dragline would be used during excavations. But the multiple draglines are shown in order to give the reader a sense of their scale throughout different portions of the view).

The visual character of the potentially visible portions of the dragline contrasts with the natural form, line and texture of the surrounding environment. However, the dragline would be painted a neutral-tone color to achieve the best blending with the surrounding landscape and vegetation. Consequently, this impact would not cause a dominant and/or permanent change in the visual quality of the area. The dragline would be visible only during the mining of the phases nearest the receptors. Furthermore, the dragline would move throughout the Project site as the various phases are being completed. The worst-case view scenarios depicted in Figure 3.1-5 and Figure 3.1-6 would occur during excavations in the easternmost mining phases. For these reasons, 1 point has been deducted from the cultural modifications score, to account for periodic visibility of the dragline. However, it should be noted that the increase in vegetation due to construction of the perimeter berm has resulted in a 1 point increase in the vegetation score. Consequently, the resulting visual quality score for the operational phase view remains at 12 points. However, since visual quality can be subjective visual impact is considered potentially significant.

Reclamation Phase: During the reclamation phase, the Project's long-term visual changes include its proposal to remove the vegetated perimeter berm and reclaim the site to agriculture, open space,

native habitat and a series of ponds. However, these land uses are compatible with the surrounding visual character. Furthermore, since the 1 point decrease in the vegetation score is offset by a 1 point increase in the water score (due to the presence of visible water in the reclaimed condition of the Project site), the reclamation phase visual quality score remains at 12 points. Therefore, the long-term visual impacts to views at residences located east of the Project site are considered less than significant.

Views from Adjacent Roads

The Project site is visible by the traveling public from the adjacent roadways of Goodfellow Avenue and Riverbend Avenue. The existing view along Riverbend Avenue is shown in Figure 3.1-5. The existing view along Goodfellow Avenue is shown in Figure 3.1-7.

Operational Phase: Along Riverbend Avenue the plant site equipment and stockpiles and mining area will be shielded by the vegetated berm as shown in Figure. 3.1-5. Along the north side of Goodfellow Avenue the plant site equipment and stockpiles and mining phases will be shielded by the orchard-like screen. Along the south side of Goodfellow Avenue mining phases will be shielded by the orchard-like screens on the west part of the Project site and by the vegetated berm on the east 2,000 feet part of the Project site. However, the dragline would be visible at times during work in the phases adjacent to those roads because it is too tall to be entirely screened from view as shown in Figures 3.1-5 and 3.1.7.

As previously stated, the visual character of the potentially visible portions of the dragline contrasts with the natural form, line and texture of the surrounding environment. However, the dragline would be painted a neutral-tone color to achieve the best blending with the surrounding landscape and vegetation. Consequently, this impact would not cause a dominant and/or permanent change in the visual quality of the area. The dragline would be visible only during the mining of the phases nearest the roads. Furthermore, the dragline would move throughout the Project site as the various phases are being completed. For these reasons, 1 point has been deducted from the cultural modifications score, to account for periodic visibility of the dragline. However, it should be noted that the increase in vegetation due to construction of the perimeter berm and orchard-like screens has resulted in a 1 point increase in the vegetation score. Consequently, the resulting visual quality score for the operational phase view remains at 12 points. However, since visual quality can be subjective, visual impact is considered potentially significant.

Reclamation Phase: During the reclamation phase, the Project's long-term visual changes include its proposal to remove the vegetated perimeter berm and reclaim the site to agriculture, open space, native habitat and a series of ponds. However, these land uses are compatible with the surrounding visual character. Furthermore, since the 1 point decrease in the vegetation score is offset by a 1 point increase in the water score (due to the presence of visible water in the reclaimed condition of the Project site), the reclamation phase visual quality score remains at 12 points. Therefore, the long-term visual impacts to views by the traveling public are considered less than significant.

Level of Significance Before Mitigation

Potentially Significant

Mitigation Measures**Mitigation Measure AES-1:**

A 10-foot high vegetated berm shall be constructed along Riverbend Avenue adjacent to Phases 3A, 3B, 4A and 4B. An 8-foot vegetated berm shall be constructed along the south side of Goodfellow from Riverbend Avenue to 2,000 feet west of Riverbend Avenue. The berms will be planted with evergreen trees that will grow at least 15' high in two (2) staggered rows with one row on top of the berm. The berms shall be constructed and planted prior to the removal of overburden in each phase.

Mitigation Measure AES-2:

Orchard-like screens shall be planted on the north side of Goodfellow Avenue west of the entrance road and on the south side of Goodfellow Avenue west of the 8-foot high vegetated berm prior to overburden removal in the adjacent phases. The tree species will be evergreen trees (e.g. olives) planted at a minimum of four (4) rows parallel to Goodfellow Avenue, with adjacent rows off-set such that there are no gaps to ensure dense screening.

Mitigation Measure AES-3:

The dragline shall be painted a neutral-tone color to achieve the best blending with the surrounding landscape and vegetation.

Level of Significance After Mitigation

Less Than significant.



Existing views from adjacent residential homes along Riverbend Avenue

Key Factors	RATING CRITERIA SCORE
Landform	1
Vegetation	3
Water	0
Color	3
Influence of Adjacent Scenery	3
Scarcity	3
Cultural Modifications	-1
Total Score	12



Operational phase views from adjacent residential homes along Riverbend Avenue

Key Factors	RATING CRITERIA SCORE
Landform	1
Vegetation	4
Water	0
Color	3
Influence of Adjacent Scenery	3
Scarcity	3
Cultural Modifications	-2
Total Score	12



Final reclaimed views from adjacent residential homes along Riverbend Avenue

Key Factors	RATING CRITERIA SCORE
Landform	1
Vegetation	3
Water	0
Color	3
Influence of Adjacent Scenery	3
Scarcity	3
Cultural Modifications	-1
Total Score	12

LOCATION 3

Source: RGP Planning & Development Services, 2012

Figure 3.1-5. Views from Residences East of the Site (South Portion)



Existing views from adjacent residential homes along Riverbend Avenue

Key Factors	RATING CRITERIA SCORE
Landform	1
Vegetation	3
Water	0
Color	3
Influence of Adjacent Scenery	3
Scarcity	3
Cultural Modifications	-1
Total Score	12



Operational phase views from adjacent residential homes along Riverbend Avenue

Key Factors	RATING CRITERIA SCORE
Landform	1
Vegetation	4
Water	0
Color	3
Influence of Adjacent Scenery	3
Scarcity	3
Cultural Modifications	-2
Total Score	12



Final reclaimed views from adjacent residential homes along Riverbend Avenue

Key Factors	RATING CRITERIA SCORE
Landform	1
Vegetation	2
Water	1
Color	3
Influence of Adjacent Scenery	3
Scarcity	3
Cultural Modifications	-1
Total Score	12

LOCATION 4

Source: RGP Planning & Development Services, 2012

Figure 3.1-6. Views from Residences East of the Site (North Portion)



Existing views from Goodfellow Avenue

Key Factors	RATING CRITERIA SCORES
Landform	1
Vegetation	3
Water	0
Color	3
Influence of Adjacent Scenery	3
Scarcity	3
Cultural Modifications	-1
Total Score	12



Operational views with orchard-like screen

Key Factors	RATING CRITERIA SCORES
Landform	1
Vegetation	4
Water	0
Color	3
Influence of Adjacent Scenery	3
Scarcity	3
Cultural Modifications	-2
Total Score	12



Final reclaimed views from Goodfellow Avenue

Key Factors	RATING CRITERIA SCORES
Landform	1
Vegetation	3
Water	0
Color	3
Influence of Adjacent Scenery	3
Scarcity	3
Cultural Modifications	-1
Total Score	12



Source: RGP Planning & Development Services, 2012

Figure 3.1-7. Views from Goodfellow Avenue

3.1.6.3 Light and Glare

Impact Statement

Impact AES-2: Could the Project create a new source of light or glare, which would adversely affect day or nighttime views in the area? **(CEQA Guidelines Threshold Criteria (d)).**

Impact Analysis

The issue of light and glare is typically associated with excessively bright nighttime lighting that crosses over property lines (aka “light trespass”) and illuminates off-site yards or bedroom windows. It is also associated with the condition that occurs when excessive nighttime lighting creates a “skyglow” effect.

As discussed in Section 2.0 Project Description, operations would occur primarily during daylight hours. Operations during the time of year when daylight hours are shorter, or for any nighttime operations, will require lighting to provide a safe working environment. For nighttime lighting, high pressure sodium and/or cut-off fixtures (or equivalent IDA-approved fixtures) would be used instead of mercury-vapor fixtures for any required nighttime lighting of the dragline and the processing facility. The lighting would also be designed to confine illumination to the Project site, and/or to areas that do not include light-sensitive uses.

The activities associated with the Project could result in a new source of glare due to the addition of structures, equipment and vehicles. The design features incorporated into the Project to minimize potential visual impact (i.e.: the 8 – 10 feet high vegetated berms planted with 15-foot tall trees and orchard like vegetated visual screens along Riverbend and Goodfellow Avenues and the 10-foot high berm on the west side of the plant site) would also minimize potential impacts associated with glare.

By utilizing the proposed lighting and design features, the Project would have a less than significant impact associated with light and glare.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable

3.1.7 Cumulative-Level Impacts and Mitigation Measures

The regional context for addressing potential cumulative impacts to aesthetics and visual quality is the communities and neighborhoods from which residents can potentially readily view the area where the Project is located.

As discussed in Section 3.1.6.1, CEQA Guideline Thresholds a) and b) were determined to have no impact and therefore further evaluation is not considered necessary. The potential cumulative impacts associated with CEQA Thresholds c) and d) are discussed below.

Would the Project, when considered in conjunction with other cumulative projects, substantially degrade the existing visual character or quality of the site and its surroundings? (CEQA Guidelines Threshold Criteria (c))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. However, these projects are located in or near the City of Sanger, several miles away from the Project, and would be too distant to have a significant cumulative effect on aesthetics and visual character surrounding the Project. It is also assumed that, if they are approved, these projects will be considered consistent with applicable requirements and the General/Regional Plans.

As discussed above for Impact Statement AES-1, the Project would not result in a significant impact and is considered consistent with the County General Plan and the Kings River Regional Plan. Therefore, the Project would not make a cumulatively considerable contribution to this impact, and the Project's cumulative impact is considered less than significant.

Would the Project, when considered in conjunction with other cumulative projects, create a new source of light or glare, which would adversely affect day or nighttime views in the area? (CEQA Guidelines Threshold Criteria (d)).

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. Each of the cumulative projects are either existing or will incorporate lighting requirements and/or mitigation measures that effectively minimize the potential for light or glare from becoming a significant impact. Consequently, the overall cumulative impact would be less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. However, these projects are located in or near the City of Sanger, several miles away from the Project and would be too distant to have a significant cumulative effect on light or glare in the area surrounding the Project. It is also assumed that, if they are approved, these projects will be considered consistent with applicable requirements and the General/Regional Plans.

As discussed above for Impact Statement AES-2, the design features incorporated into the Project will minimize the effects of light and glare such that the Project would not result in a significant impact. The Project is considered consistent with the County General Plan and the Kings River Regional Plan. Therefore, the Project would not make a cumulatively considerable contribution to this impact and the Project's cumulative impact is considered to be less than significant.

3.1.8 Alternatives to Significant Effects

No Project Alternative

The No Project Alternative would avoid all potential Project-related impacts associated with aesthetics; however, because the Project design features and BMPs already reduce the impacts on aesthetics to less than significant, this alternative would not significantly reduce potential impacts.

Reduced Annual Production Alternative

This alternative would evaluate the potential impacts from artificially limiting the proposed production by a given amount. This alternative would not result in any changes that would impact aesthetics; therefore, it would not reduce potential impacts associated with the Project.

Reduced Project Size Alternative

This alternative would evaluate the potential impacts from artificially reducing the Project footprint by some stated amount. Impacts from excavation equipment on views to surrounding receptors may be slightly altered. However, this alternative would not result in any changes that would significantly impact aesthetics; therefore, it would not reduce potential impacts associated with the Project.

Reduced Mining Depth Alternative

This alternative would evaluate the potential impacts from artificially reducing the mining depth by some stated amount. Impacts from excavation equipment on views to surrounding receptors would not be altered except for the fact that an excavator may be used instead of a dragline. An excavator could potentially be less visible. The duration of those impacts would presumably be less as this alternative would take place 45 years less than the Project. The alternative would lessen long-term aesthetic impacts.

Different Phasing Alternative

This alternative would evaluate the potential impacts from revising the phasing plan. Impacts from excavation equipment on views to surrounding receptors may be slightly altered. This alternative would not result in any changes that would significantly impact aesthetics; therefore, it would not reduce potential impacts associated with the Project.

3.2 AGRICULTURE & FORESTRY RESOURCES

3.2.1 Introduction

This section of the DEIR describes the agricultural and forestry resources present on-site and in the immediate vicinity of the Project site, and analyzes the potential impacts of the Project on these resources.

The primary sources of information used in this analysis were the Operational Statement Riverbend Sand and Gravel Project (Buada Associates, 2013), the Surface Mining and Reclamation Plan Riverbend Sand and Gravel Project (Buada Associates, 2013), Agriculture Issues Center University of California Davis, DOC's Farmland Mapping and Monitoring Program (FMMP), DOC Important Farmlands mapping web page, Fresno County Crop Report (2012) and the Carmelita Mine and Reclamation Project DEIR (Lilburn Corporation/County of Fresno, 2011).

3.2.2 Environmental Setting

3.2.2.1 Regional Setting

The San Joaquin Valley is California's major agricultural region, producing a wide array of fruits and vegetables. Well-suited for farming, the region is hot and dry in summer with long, sunny days. Winters are moist and often blanketed with heavy fog. The broad, flat valley is ringed by the Diablo and Coast Ranges on the west and the Sierra Nevada foothills on the east. The growth of agriculture in the Central Valley has converted much of the historical native vegetation to farmland.

In the U.S. 2007 Census of Agriculture (the most recent for which results have been released), nine of the nation's top ten producing counties were in California, including seven in the San Joaquin Valley. The eight counties comprising the San Joaquin Valley represented 54 % of the value of agriculture in the State, or \$18.3 billion. According to the Agricultural Issues Center at the University of California, Davis, the share of the total direct, indirect and induced effects on the regional economy attributable to agricultural production and processing was larger for the San Joaquin Valley than for any other region in the State. The California Farm Bureau Federation ranks Fresno County first in agricultural production among all counties with a Year 2011 value of \$6,886,029,000. Agricultural production and processing industries in the San Joaquin Valley accounted for 37.8 % of regional employment, almost 30 % of regional labor income, and 34.2 % of regional total value added (UC Davis, 2009).

The FMMP maps "Important Farmland" across agricultural areas of the State. Important Farmland categories include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance, as further described in Section 3.2.3. According to the most recent Land Use Conversion report (covering the 2008 to 2010 period), Fresno County had a total of 1.370 million acres of Important Farmland in 2010, comprising approximately 36 % of Fresno County's total land area.

Fresno County has approximately 1.465 million acres enrolled in Williamson Act contracts (Williamson Act 2010 Status Report), and about 29,000 acres enrolled in Farmland Security Zone (FSZ) contracts (see Section 3.2.3.2). These contracts restrict the property owner's ability to convert farmland to non-

agricultural uses or uses defined as compatible with agricultural use for an automatically renewed period of 10 years (Williamson Act) or 20 years (FSZ), in exchange for reduced property tax obligations. In 2009, over 24,000 acres protected under Williamson Act contracts were within the 10-year non-renewal phase, indicating a likelihood of conversion to non-agricultural use within the next 10 to 15 years of this acreage.

Available water supply is a key aspect of agricultural production, and water is supplied to the Valley by several key river systems that flow westerly from the slopes of the Sierra Nevada mountain range. The major river in the valley is the San Joaquin River, with tributaries of the lower Stanislaus, Tuolumne, Merced, and Fresno Rivers. The San Joaquin River drains north through about half of the valley into the Sacramento-San Joaquin Delta. The Kings and Kern Rivers drain to the southwest, to a closed basin (no drainage outlet) of the valley historically referred to as Tulare Lake. Flows in these rivers have been largely diverted for agricultural uses and therefore they are mostly dry in their lower reaches. Tulare Lake, until the late 19th century, was the largest lake in the western United States. The lake is now normally dry; its surviving wetlands lie about forty miles south of the city of Fresno.

3.2.2.2 Vicinity Setting

Surrounding land use includes an aggregate mining operation with a ready-mix concrete plant to the north and an aggregate mining operation, approved to include a ready-mix concrete plant, to the east and southeast. Irrigated cropland with scattered farm residences are located to the east and across the Kings River to the west and south. Stone fruit orchards with several farm residences are located on the northwest corner of Goodfellow Avenue and Riverbend Avenue between the northern and southern parts of the Project site.

3.2.2.3 Project Site Setting

Of the 833 acres contained within the property parcels upon which the Project site is located, 768.8 acres are mapped Important Farmland by the FMMP. A breakdown of farmland classifications on the site is provided in Table 3.2-1, and is mapped in Figure 3.2-1. No forest land is located on the Project site.

Approximately 88 acres of the Project site (Phases 8A and 8B) are subject to Williamson Act contract No. 6322. Williamson Act contract lands are mapped in Figure 3.2-2.

The Project site is currently occupied by walnut and olive orchards and grape vineyards. Soil on the site is extremely rocky and, as a result, rapidly drains. These conditions not only limit the types of crops and agricultural practices available for use on the site, but also increase the cost of farming due to the necessary soil preparation requirements and equipment damage. As shown in site photographs of the soil conditions (Figures 2-4 and 2-5), the existing orchards and vineyard on the site tend to be stressed due to this rocky soil condition.

Table 3.2-1. Farmland Classifications

<i>Classification</i>	<i>Acreage within Property Parcels</i>	<i>Acreage within Project Site</i>
IMPORTANT FARMLAND		
Prime Farmland ¹	630.7	530.8
Farmland of Statewide Importance	17.1	13.9
Unique Farmland	121.0	73.9
<i>Total Important Farmland</i>	768.8	618.6
OTHER LANDS		
Nonagricultural or Natural Vegetation	62.7	0.1
Vacant or Disturbed	1.5	0
<i>Total Other Lands</i>	64.2	0.1
<i>Total Site</i>	833.0	618.7

Source: DOC FMMP Important Farmlands mapping, <http://maps.conservation.ca.gov/ciff/ciff.html>

¹An approximate four acre discrepancy exists between the Fresno County assessor's parcel maps and the Fresno County GIS database. All four acres were allocated to the Prime Farmland category.

The Fresno County Department of Agriculture maintains statistical information on crops grown in the county. Crops grown in the site area, and the value of this agricultural production as estimated by crop values in the 2012 Fresno County Crop Report, are listed in Table 3.2-2. As shown in the table, crops cover 644 acres of the site and have a value of \$2.353 million.

Table 3.2-2. Existing Agricultural Production on Property Parcels

<i>Crop</i>	<i>Acreage</i>	<i>Crop Production/ Acre (tons)</i>	<i>Value Per Ton</i>	<i>Total Value</i>
Wine grapes	390	10.99	\$374	\$1,603,001
Olives	174	2.72	\$865	\$409,387
Walnuts	80	1.59	\$2,685	\$341,532
Total	644	--	--	\$2,353,920

Note: Crop production/acre and values from 2012 Fresno County Crop Report.

The Project site is within the Kings River Water District. Water service is provided via four on-site domestic wells and four active irrigation wells.

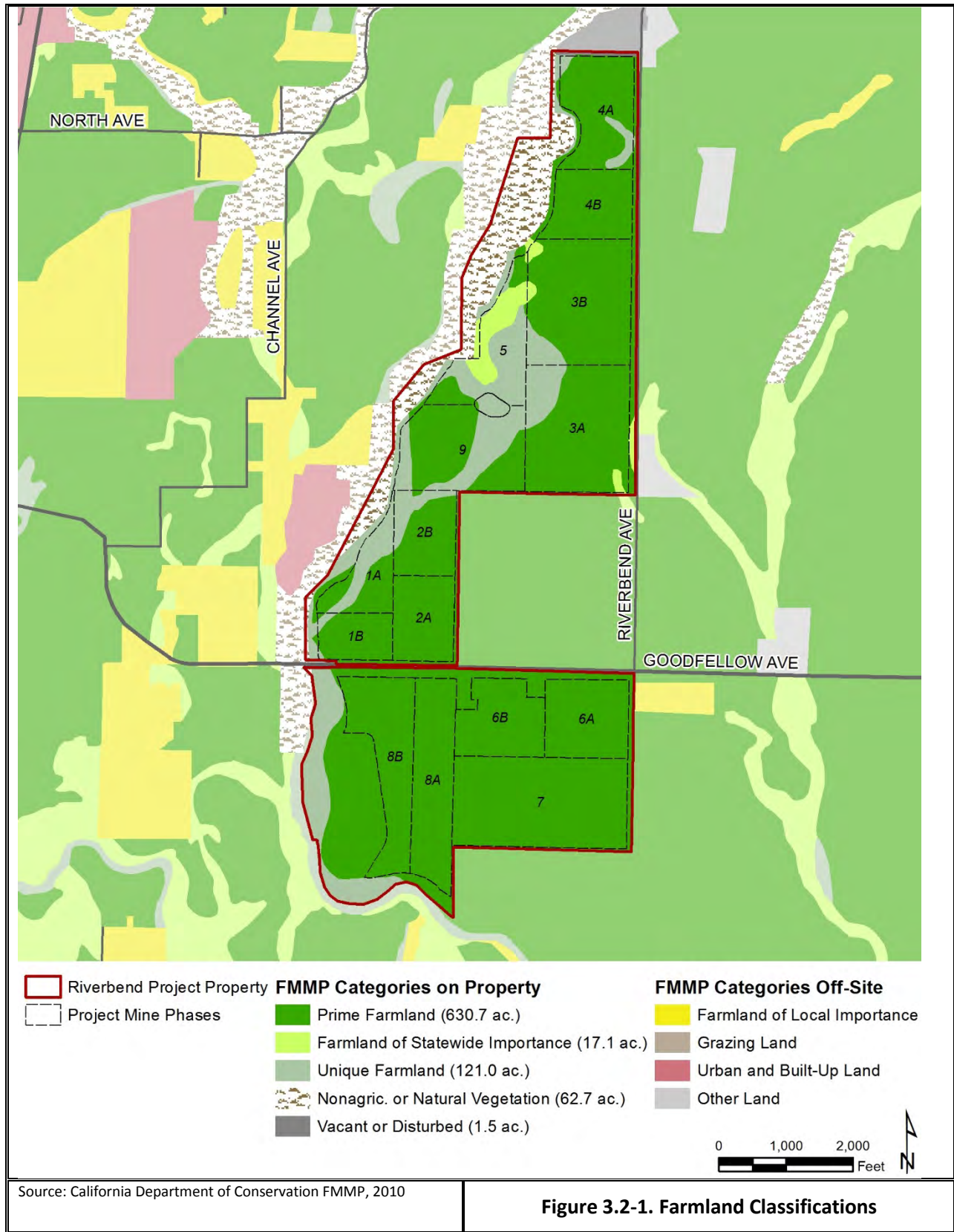
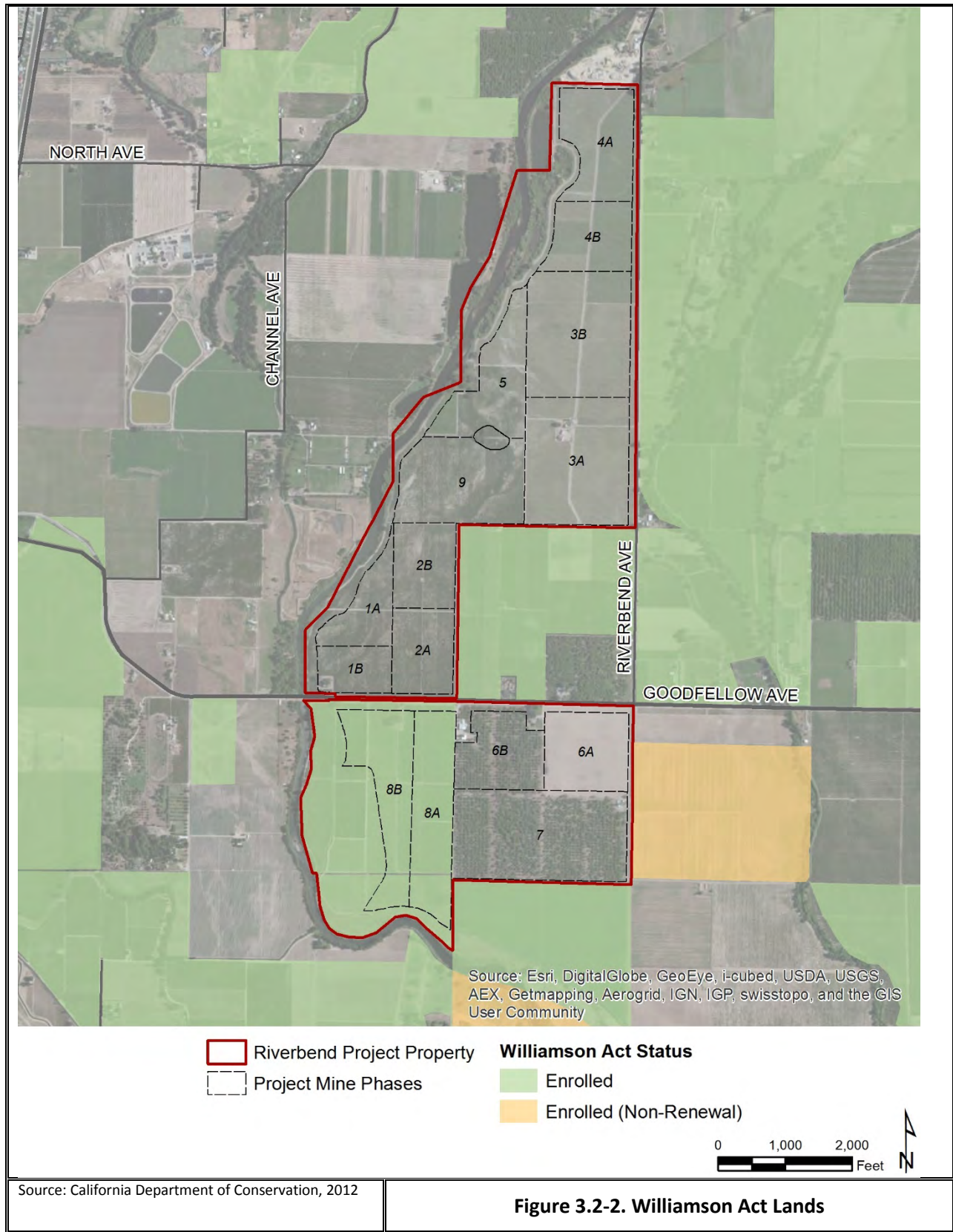


Figure 3.2-1. Farmland Classifications



3.2.3 Regulatory Setting

3.2.3.1 Federal

Farmland Protection Policy Act (7 U.S.C. Section 4201 et seq.)

The purpose of the FPPA is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It additionally directs Federal programs to be compatible with State and local policies for the protection of farmlands. Congress passed the Agriculture and Food Act of 1981 (Public Law 97-98) containing the FPPA—Subtitle I of Title XV, Section 1539-1549. The final rules and regulations were published in the Federal Register on June 17, 1994. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years. The FPPA does not authorize the Federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.

3.2.3.2 State

California Department of Conservation, Division of Land Resource Protection – Farmland Mapping and Monitoring Program

DOC's FMMP applies the Natural Resources Conservation Service (NRCS) soil classifications to identify agricultural lands. These agricultural designations are important planning tools for California's agricultural land resources. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres classified based on surrounding land classifications. Land designations include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, Other Land, Water, Irrigated Farmland, and Non-Irrigated Farmland. As described in Section 3.2.2.3, land designations mapped on the Project site include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Other Lands (including the subcategories of Nonagricultural or Natural Vegetation and Vacant or Disturbed lands). These categories are further described below:

- a) **Prime Farmland:** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- b) **Farmland of Statewide Importance:** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- c) **Unique Farmland:** Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- d) **Other Land:** Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land. The Rural Land Mapping Project provides more detail on the distribution of various land uses within the Other Land category in nine FMMP counties, including Fresno County. The Rural Land categories present on the Project site include: Vacant or Disturbed Land and Nonagricultural or Natural Vegetation.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is codified in California Government Code Section 51200-51297.4, and is applicable only to specific land parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Williamson Act contracts may be terminated by the property owner through the process of non-renewal, which results in gradually increasing property taxes over a period of 10 years, with the contract expiring at the end of the 10-year non-renewal period. Alternatively, immediate cancellation can occur if the County's Board of Supervisors makes certain findings, and the landowner pays a penalty.

Farmland Security Zone Act

The Farmland Security Zone Act is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." Under the provisions of this Act, a landowner already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a second contract with the county. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35 % reduction in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses.

California Timberland Productivity Act

The California Timberland Productivity Act (Government Code Section 51100 et seq.) recognizes that forest resources and timberlands of this State, together with the forest products industry, contribute substantially to the health and stability of the state's economy and environment by providing high-quality timber, employment opportunities, regional economic vitality, resource protection, and

aesthetic enjoyment. Accordingly, the State intends to maintain the limited supply of timberland to ensure its current and continued availability for the growing and harvesting of timber and compatible uses, discourage premature or unnecessary conversion of timberland to urban and other uses, discourage expansion of urban services into timberland, encourage investment in timberlands based on reasonable expectation of harvest, and ensure that forest practice rules adopted by the State Board of Forestry and Fire Protection are followed.

3.2.3.3 Local

Fresno County General Plan goals and policies are intended to protect agricultural lands through the establishment of development policies and land use and zoning designations that direct and control the types of land uses and development that may occur in any given area.

Agriculture is addressed in the County's General Plan vision statement for Agricultural Land Protection and Resource Protection, and in its related agricultural goals and policies. Resource Lands, as defined in the General Plan, are those lands "generally designated and devoted to agriculture, grazing, resource extraction, and other open space uses."

Vision Statement

Agricultural Land Protection: The General Plan seeks to protect its productive agricultural land as the county's most valuable natural resources and the historical basis of its economy, through directing new urban growth to cities and existing unincorporated communities and by limiting the encroachment of incompatible development into agricultural areas.

Resource Protection: The plan seeks to protect and promote the careful management of the County's natural resources, such as its soils, water, air quality, minerals, and wildlife and its habitat, to support the county's economic goals and to maintain the county's environmental quality.

Resource Lands Section of the Agricultural and Land Use Element

Goal LU-A: To promote the long-term conservation of productive and potentially productive agricultural lands and to accommodate agricultural-support services and agriculturally-related activities that support the viability of agriculture and further the County's economic development goals.

Policies

LU-A.1 Agricultural Land Conservation The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available.

LU-A.3 Agricultural and Nonagricultural Uses and Activities The County may allow, by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities,

including value-added processing facilities, and certain nonagricultural uses. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria:

- a. The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics;
- b. The use should not be sited on productive agricultural lands if less productive land is available in the vicinity;
- c. The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius;
- d. A probable workforce should be located nearby or be readily available;
- e. For proposed agricultural commercial center uses the following additional criteria shall apply:
 1. Commercial uses should be clustered in centers instead of single uses.
 2. To minimize proliferation of commercial centers and overlapping of trade areas, commercial centers should be located a minimum of four (4) miles from any existing or approved agricultural or rural residential commercial center or designated commercial area of any city or unincorporated community.
 3. New commercial uses should be located within or adjacent to existing centers.
 4. Sites should be located on a major road serving the surrounding area.
 5. Commercial centers should not encompass more than one-quarter (1/4) mile of road frontage, or one-eighth (1/8) mile if both sides of the road are involved, and should not provide potential for developments exceeding ten (10) separate business activities, exclusive of caretakers' residences.
- f. For proposed value-added agricultural processing facilities, the evaluation under criteria "a" above, shall consider the service requirements of the use and the capability and capacity of cities and unincorporated communities to provide the required services; and
- g. For proposed churches and schools, the evaluation under criteria LU-A.3a above shall include consideration of the size of the facility. Such facilities should be no larger than needed to serve the surrounding agricultural community. When approving a discretionary permit for an existing commercial use, the criteria listed above shall apply except for LU-A.3b, e2, e4, and e5.

LU-A.4 Resource Extraction in Agricultural Areas The County shall require that the recovery of mineral resources and the exploration and extraction of oil and natural gas in areas designated Agriculture comply with the Mineral Resources Unit of the Open Space and Conservation Element.

LU-A.11 Substandard Lots for Resource Exploration and Extraction The County may allow by discretionary permit creation of substandard size lots when such action is deemed necessary by the Board of Supervisors for the recovery of mineral resources and the exploration and extraction of oil and gas in accordance with the policies of Section OS-C, Mineral Resources, of the Open Space and Conservation Element. In no case shall such action result in creation of lots less than five (5) gross acres in size.

LU-A.12 Agricultural Protection In adopting land use policies, regulations, and programs, the County shall seek to protect agricultural activities from encroachment by incompatible land uses.

LU-A.13 Agricultural Buffers The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed nonagricultural uses and adjacent agricultural operations.

LU-A.14 Agricultural Land Conversion Review The County shall ensure that the review of discretionary permits includes assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.

LU-A.17 Williamson Act Contracts The County shall accept Williamson Act contracts on all designated agricultural land subject to location, acreage, and use limitations established by the County.

Mineral Resources Section of Open Space and Conservation Element

Goal OS-C To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.

Policies

OS-C.1 Incompatible Mining Uses The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.

OS-C.2 Mineral Resource Zones The County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2). (See Figures 7-9, 7-10, and 7-11 in the Fresno County General Plan Background Report.)

OS-C.3 Surface Mine Operation The County shall require that the operation and reclamation of surface mines be consistent with the SMARA and special zoning ordinance provisions.

OS-C.4 Mining Impacts The County shall impose conditions as necessary to minimize or eliminate the potential adverse impact of mining operations on surrounding properties.

OS-C.5 Surface Mine Reclamation The County shall require reclamation of all surface mines consistent with SMARA and the County's implementing ordinance.

OS-C.6 Williamson Act on Mineral Deposits The County may accept California Land Conservation (Williamson Act) contracts on land identified by the State as containing significant mineral deposits subject to the use and acreage limitations established by the County.

OS-C.9 Mineral Resource Zone Compliance The County shall require that any proposed changes in land use within areas designated MRZ-2 along the San Joaquin and Kings Rivers comply with the provisions of the State Surface Mining and Reclamation Act (SMARA).

OS-C.10 Mineral Resource Lands Protection The County shall not permit land uses that threaten the future availability of the mineral resource or preclude further extraction of those resources.

OS-C.11 Watershed-based Aggregate Mine Plan The County shall undertake a comprehensive, watershed-based planning effort to assess future extraction of the aggregate resources and recreation uses along the Kings River as a part of an update of the Kings River Regional Plan. Such a planning effort would help to facilitate use of the resource while protecting other Kings River watershed resources and functions, including floodplain areas.

Job Creation Section of the Economic Development Element

ED-A.12 Higher-value Specialty Crops The County shall support and encourage trends in agricultural production that shift suitable land into higher-value specialty crops that can support a more diverse processing sector with higher paying and more steady employment opportunities.

ED-A.13 Agricultural Market Research Assistance The County shall assist agricultural agencies and marketing cooperatives to research global and domestic markets for high-value crops.

ED-A.14 General Plan Implementation The County shall encourage and, where appropriate, assist the Economic Development Corporation to develop new markets for Fresno County farm produce.

ED-A.15 Crop Shift Assistance The County shall support efforts of the UC Cooperative Extension, the Agricultural Commissioner, and other entities to provide technical assistance to farmers attempting to shift to higher-value crops.

Kings River Regional Plan

Objective 2.00e: Provide for the conservation, utilization, and development of mineral resources in the Kings River area while minimizing the impact of mineral extraction activities on the natural environment.

Policy 4.05 Recovery of Mineral Resources The recovery of mineral resources in all zone districts will occur under the appropriate locational and operational standards specified in the Mineral Resources Unit of the Open Space/Conservation Element of the Fresno County General Plan.

Policy 8.01 Sand and Gravel Location Criteria Sand and gravel operations should be encouraged in appropriate locations and should meet all Standards of the Mineral Resources Section of the General Plan.

Fresno County Zoning Ordinance

The existing zoning designation for the Project site is AL-20 (Limited Agriculture, 20-acre minimum lot size). As described in Section 817 of the Zoning Ordinance, this zone is intended to protect the general welfare of the agricultural community by limiting intensive uses in agricultural areas where such uses may be incompatible with other less intensive agricultural operations. Surface mining operations and related facilities and activities are permitted in the AL-20 district subject to a CUP and the provisions of Section 858 of the Zoning Ordinance.

Mineral resources are specifically identified in Section 858 as “valuable community assets which must be safeguarded against preemption by competing or conflicting land uses.” The County also discusses that mineral deposits are frequently located in areas which are also suited for other types of development or are in areas characterized by significant natural resources. Therefore, care must be taken to ensure that mineral resources are recovered efficiently and safely, with minimal disruption to surrounding land uses and environmental values, and that sites are reclaimed to a usable condition which is readily adaptable for alternative land uses.

Fresno County Right to Farm Ordinance

The Right to Farm Ordinance (Ordinance 17.04.100 and 17.72.075) provides the following:

It is the declared policy of Fresno County to preserve, protect, and encourage development of its agricultural land and industries for the production of food and other agricultural products. Residents of property in or near agricultural districts should be prepared to accept the inconveniences and discomfort associated with normal farm activities. Consistent with this policy, California Civil Code 3482.5 (right-to-farm law) provides that an agricultural pursuit, as defined, maintained for commercial uses shall not become a nuisance due to a changed condition in a locality after such agricultural pursuit has been in operation for three years.

3.2.4 Significance Thresholds

3.2.4.1 Appendix G Thresholds from the State CEQA Guidelines

According to Appendix G of the CEQA Guidelines, the Project would have a significant effect if it would:

- a) *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use;*
- b) *Conflict with existing zoning for agricultural use, or a Williamson Act contract;*
- c) *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g));*
- d) *Result in the loss of forest land or conversion of forest land to non-forest use; or*
- e) *Involve other changes in the existing environment which, due to their location or nature, could result in substantial conversion of Farmland to non-agricultural use, substantially impair the productivity of adjacent agricultural areas, or result in conversion of forest land to non-forest use.*

3.2.4.2 Additional Thresholds of Significance

Requirements identified in the County policies and plans are addressed by the significance criteria above. There are no additional thresholds of significance related to the topical environmental issue.

3.2.5 Methodology of Analysis

This analysis is based on the review of applicable Federal, State and local requirements, Project design features, BMPs, operating practices and other environmental protection measures that have been incorporated into the Project to minimize potential impacts on the environment, review of the environmental evaluation of similar projects in the area and comments received during the scoping process.

Scoping letters that contained specific concerns regarding agricultural resources included, but were not limited to the following letters:

- Letter from the County Department of Agriculture, August 5, 2013;
- Letter from the County Policy Planning Unit, August 7, 2013.
- Letter from the City of Reedley, September 13, 2013.

A copy of the Scoping Report which includes all the comment letters is provided in Appendix A.

The amount of farmland that would be permanently converted as a result of the Project was compared to the DOC loss rate of Important Farmland during previous years. Over the 75 year life of the Project 351 acres of farmland would be lost. However, the permanent loss of 351 acres of Important Farmland is a potentially significant impact. Therefore further analysis was deemed necessary.

One way to assess the level of impact a project may have on agricultural land in the region is to rate the value of the property through the use of the California Agricultural Land Evaluation and Site Assessment

(LESA) Model. LESA was developed as a tool for lead agencies to quantitatively and consistently evaluate significant effects on the environment of agricultural land.

The LESA model rates the relative quality of land resources based on specific, measurable features, following a point-based approach that quantifies land's agricultural value and the potential harm to agricultural resources from a proposed project on a 100-point scale. It comprises analysis at two levels:

- **Land Evaluation:** This evaluation uses two factors, the USDA Land Capability Classification (LCC) and the Storie Index, to analyze soil-based qualities of land as they relate to agricultural suitability.
- **Site Assessment:** The site assessment evaluates four factors measuring the social, economic, and geographic attributes that contribute to the overall value of agricultural land. These factors assess a project's size, water resource availability, surrounding agricultural lands and surrounding protected agricultural lands.

Each of these six factors is separately rated on a 100-point scale. The factors are weighted relative to one another and combined, resulting in a single numeric score with a maximum attainable score of 100. This score becomes the basis for determining the project's significance, based upon a range of established scoring thresholds. The conversion of farmland with a score between 80 – 100 is considered to be a significant impact under CEQA. A detailed explanation of the scoring procedure can be found in Appendix D-3 of the LESA Instruction Manual.

The LESA Model is designed to make a determination of potential significance under CEQA (LESA Instruction Manual, Appendix D-3, p. 31). Using the LESA model to assess the value of the Project resulted in a score of 91.58 points (see Table 3.2-3). As identified in the California LESA Model Scoring Thresholds, the conversion of farmland with a score between 80 and 100 is considered to be a significant impact under CEQA.

Table 3.2-3. LESA Scoresheet

Land Evaluation Factors	Factor Score	Factor Weight	Weighted Factor Scores
Land Capability Classification	91.86	0.25	22.97
Storie Index	84.46	0.25	21.11
Land Evaluation Subtotal		0.50	44.08
Site Assessment Factors			
Project Size	100	0.15	15.00
Water Resource Availability	100	0.15	15.00
Surrounding Agricultural Land	100	0.15	15.00
Protected Resource Land	50	0.05	2.50
Site Assessment Subtotal			47.50
Final LESA Score			91.58

Project Design Features, BMPs and Environmental Protection and Minimization Measures

As discussed in Section 2.3.17, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project design to minimize potential impacts on the environment. The following design features were considered during this evaluation:

- Agriculture would be continued as an on-site activity until a given phase is deemed necessary to mine, thereby preserving the existing land use for as long as possible.
- Approximately 268 acres or 43% of the Project site would be reclaimed to farmland. The reclaimed lands would be returned to agricultural lands of equal or better quality of that currently existing on the site (i.e.: improving the rocky (stressed) soil conditions currently present at the Project site).
- Top soil would be carefully removed prior to mining an area and then stored and protected to be used to recover the reclaimed areas with farmable soils as required in the Reclamation Plan.

Processing Phases 6A & B and 7 Material at the CUP 3052 Plant

If materials from Phases 6A, 6B and 7 were to be processed at the CUP 3052 plant (Section 2.3.15.7), the relocation of a conveyor within the Project site would not create any different or additional effects on the agricultural resources.

3.2.6 Project-Level Impacts and Mitigation Measures**3.2.6.1 Issues Found to Have No Impact**

The following CEQA thresholds were evaluated and it was determined that the Project would have no impact; therefore, these potential effects do not need to be considered further.

- c) ***Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?***

The Project site is not zoned forest land, timberland or Timberland Production. Therefore there would not be any conflict related to these zones.

- d) ***Would the Project result in the loss of forest land or conversion of forest land to non-forest use?***

The Project site is not zoned forest land, timberland or Timberland Production. Therefore there would not be any issues related to these zones.

3.2.6.2 Conversion of Farmland to Non-agricultural Use

Impact Statement

Impact AG-1: Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use? **(CEQA Guidelines Threshold Criteria (a))**

Impact Analysis

Within the 619-acre mining area, Project implementation would permanently convert 351 acres of Important Farmland to non-agricultural use and reclaim 268 acres for agricultural use. Due to the depth of mining (100 feet) and the volume of aggregate material that would be removed, it is not possible to reclaim the entire Project site to agricultural land without importing fill. Importing fill to replace all the aggregate removed would be prohibitively expensive and would significantly increase GHG emissions.

The Project site is classified by the State (1986) and the County (1987) as MRZ-2 and the State (1988) also designated the Project sites as having construction-grade aggregate deposits that are of regional significance. SMARA requires a lead agency's land use decisions involving designated areas (Mineral Resource Zones) be made in accordance with its mineral resource management policies, and that the lead agency consider the importance of the mineral resource to the region as a whole and not just the lead agency's area of jurisdiction. This MRZ-2 classification and regional designation indicates that both the County and the State believe that extraction of mineral resources on the site is a legitimate and valuable land use, even when it removes valuable farmland from production.

The CGS report titled *Aggregate Availability in California – Map Sheet 52* (updated 2012) uses the Department of Finance future population estimates and historical per capita consumption to estimate future demand. Map Sheet 52 indicates that the P-C Region's projected 50-year aggregate demand as of January 1, 2011 was approximately 435 MMtons. Existing permitted reserves at that time were indicated to be 46 MMtons. However, that estimate did not include the 63 MMtons approved for the Sanger-Centerville Expansion (Vulcan Materials Company) in 2007 or the 50 MMtons approved for the Madera Quarry (Shimmick Construction) in Madera County in 2010. In 2012, the Carmelita Mine and Reclamation project (Colony Land Company) was approved for 85 MMtons. Those three projects added 198 MMtons (net finished aggregate product) of permitted reserves to the P-C Region. Without adjusting for reserves consumed since January 1, 2011, total permitted reserves in the P-C region would be 244 MMtons.

In 2010, Map Sheet 52 indicated that the P-C Region consumed approximately 6.0 MMtons per year (MMtpy). At that consumption rate for the four-year period of 2011 through 2014, approximately 24 MMtons of permitted reserves would have been consumed, leaving 220 MMtons of permitted reserves at the beginning of 2015, or approximately 50% of the 50-year demand.

Within Fresno County's 6,017 square miles, only 32 square miles (approximately 0.5 % of the County) have been designated by CGS as being MRZ-2 lands containing construction-grade aggregates of regional importance. Lands with an MRZ-2 designation are far less common in Fresno County than lands mapped Important Farmland, which make up 2,141 square miles, or approximately 36% of the County's 6,017 square miles (California Department of Conservation, Farmland Mapping and Monitoring Program, 2014). Mineral resources development on such rare sites therefore serves a greater public purpose than continued agricultural operations on those sites.

As discussed in Section 3.2.5, the Project site has a LESA score of 92 points. As identified in the California LESA Model Scoring Thresholds, the conversion of farmland with a score between 80 and 100 is considered to be a significant impact under CEQA.

Fresno County does not have an established farmland protection program or uniform agricultural conservation banking program to which the Project proponent could contribute. However, the following methods may be used to mitigate the Project's impacts to farmlands; reclaiming mined areas to farmland, improving the post-mining soil productivity, phasing the project to delay farmland impacts, and placing agricultural conservation easements on non-project areas.

The Project would incorporate the following environmental protection measures designed to minimize potential impacts associated with conversion of farmland to non-agricultural uses.

1. Agriculture would be continued on the Project site as an on-site activity until a given phase is deemed necessary to mine.
2. The proposed mining operation would be phased and agriculture use would continue on each phase until approximately one year before scheduled mining. Substantial areas of Important Farmland (approximately 350 acres or over 55 %) on the Project site would continue to operate for at least 30 years after Project implementation has begun. Therefore, phasing of Project implementation would reduce impacts related to the loss of farmland.

Approximately 268 acres of the Project site would be reclaimed to farmland.

3. For each of the phases to be reclaimed as farmland, farming will resume within two years after the phase has been filled. By about halfway through the anticipated 75-year life of the Project, approximately 135 of the 268 acres to be reclaimed to farmland would be so reclaimed.
4. Overburden will be stored during the mining process and used to fill the mined areas to be reclaimed to farmland as identified in the Reclamation Plan. Top soil will be carefully removed prior to mining an area and then stored and protected to be used as a final cover of farmable soils for the mined areas to be reclaimed to farmland as required in the Reclamation Plan.

Although the Project's design features would achieve partial mitigation of the Project's potentially significant impacts associated with farmland conversion, they would not reduce those impacts below the level of significance.

Level of Significance Before Mitigation

Potentially significant.

Mitigation Measures**Mitigation Measure AG-1:**

The Project shall conserve agricultural land by acquiring an agricultural conservation easement (ACE) on 351 acres of Important Farmland as classified by DOC's FMMP to mitigate for the 351 acres of Important Farmland on the Project site to be converted to non-agricultural use. The ACE would be phased in accordance with the following schedule:

- Within one year of existing agricultural land being taken out production for the Project 100 acres shall be placed in an ACE.
- Within 5 years, or before 100 acres of existing agricultural land has been taken out of agricultural production for the Project, an additional 100 acres shall be placed in an ACE.
- Within 10 years, or before 200 acres of existing agricultural land has been taken out of agricultural production for the Project, an additional 75 acres shall be placed in an ACE.
- Within 15 years, or before 275 acres of existing agricultural land has been taken out of agricultural production for the Project, an additional 76 acres shall be placed in an ACE.

Temporarily taking of land out of agriculture production for normal farming purposes (e.g. rotating crops, resting soil, etc.) shall not be considered taking of existing agricultural land out of production for the Project

Level of Significance after Mitigation

After mitigation, impacts to farmland are found to be less than significant.

3.2.6.3 Conflicts with Zoning and the Williamson Act**Impact Statement**

Impact AG-2: Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract? **(CEQA Guidelines Threshold (b))**

Impact Analysis

Mining activities are not specifically identified in the Zoning Code's description of uses permitted, conditionally permitted, or prohibited in the AL zone. However, Section 858 of the Zoning Ordinance allows for conditional approval of surface mining operations, including ancillary activities, in any zone in the county. Additionally, General Plan policy LU-C.5 identifies mining as an allowable use within the King River Regional Plan area. Fresno County's goal is to conserve areas identified as containing significant mineral deposits for potential future mining use, while promoting the reasonable, safe, and orderly operation of mining extraction activities within areas designated for such use. Conflicts related to existing General Plan or Zoning would not exist with approval of a CUP. Since the Project includes County approval of a CUP, Project-related impacts related to a conflict with existing zoning would be less than significant.

Under the controlling Williamson Act contract, mining is considered a compatible use. The County Resolution that contains restrictions and conditions and lists compatible uses under the subject Williamson Act contracts provides that, "*Development of natural resources including borrow pits and quarries, with necessary buildings, apparatus, or appurtenances thereto,*" are uses that are compatible with Williamson Act Contracts. Therefore, Project operations would be consistent with the express language of the current Williamson Act contracts. However, the DOC has previously commented (on other similar projects) that long-term mining and associated ancillary uses are not considered a compatible use within Williamson Act-contracted lands.

County policy provides administrative procedures for diminishing or canceling Williamson Act contracts. Approximately 88 acres of the Project site which are scheduled to be mined during Phases 8A and 8B are currently subject to the Williamson Act Contract No. 6322. At this time, Contract No. 6322 is active and has not been the subject of a notice of non-renewal, cancellation, or diminishment in size. At least 10 years prior to the scheduled mining of Phases 8A and 8B, a Notice of Non-renewal shall be filed with the County. By the time Phases 8A and 8B are ready to be mined, the Williamson Act contract will have expired.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None Required

Level of Significance after Mitigation

Not applicable

3.2.6.4 Other Changes in the Environment Leading to Farmland Conversion

Impact Statement

Impact AG-3: Would the Project involve other changes in the existing environment, which due to their location or nature, could result in substantial conversion of Farmland to non-agricultural use, substantially impair the productivity of adjacent agricultural areas, or result in conversion of forest land to non-forest use? **(CEQA Guidelines Threshold Criteria (e))**

Impact Analysis

The Project would provide raw materials to meet the demand for local and regional construction projects. The Project's operations would respond to local demand, not cause demand to increase. Therefore, the Project would not be expected to induce the conversion of agricultural or forest lands to other uses.

Locally, the Project would not be anticipated to produce any direct impacts on agricultural land uses that would cause them to convert to other land uses. Existing mining operations in the Project vicinity operate with no identified negative impacts on local agricultural uses.

The Project includes ultimate reclamation of the 619-acre mining site to include 268 acres of agriculture. Topsoil removed during mining would be stockpiled and protected from erosion (for example, through vegetation) until reclamation occurs. The remaining 351 acres of the mining site would be reclaimed to a condition typical of the Kings River valley, with open space and riparian and open water habitat.

Because the Project would not induce development on local agricultural or forest lands and would not have a negative impact on local agricultural operations, and the final reclamation of the site would re-create conditions already common to the area, including agricultural and open space land uses, the Project is not expected to involve changes in the existing environment that would result in conversion of farmland to non-agricultural use, substantially impair the productivity of adjacent agricultural areas, or result in conversion of forest land to non-forest use resulting in less than significant impacts.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable

3.2.7 Cumulative-Level Impacts and Mitigation Measures

The geographical context for assessing cumulative impacts to agricultural resources is the County of Fresno. The County's General Plan sets out the County's goals, policies and programs for the period of 2000 to 2020 and beyond. In order to support the County's economic development goals, the Plan seeks to protect and promote the careful management of the County's valuable natural resources, including agricultural lands and mineral resources.

As discussed in Section 3.2.6.1, CEQA Guidelines Thresholds c) and d) were determined to have no impact and therefore further evaluation is not considered necessary. The potential cumulative impacts associated with CEQA Thresholds a), b) and e) are discussed below.

Would the Project, when considered in conjunction with other cumulative projects, convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use? (CEQA Guidelines Threshold Criteria (a))

Cumulative Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel and Santa Fe Aggregates) appear to have cumulatively significant impacts. Carmelita would result in the permanent removal of approximately 583 acres of agricultural land. Sanger-Centerville would convert over 350 acres of agricultural lands during active mining and would reclaim these areas to open water ponds. Kings River would create a net loss of up to 315 acres of agricultural lands. Santa Fe Aggregates is an existing project but will result in the conversion of approximately 100 acres of farmland.

Cumulative Projects 5 through 7 (Sanger Crossing Apartment, Pitman farms, and Family Dollar Store) are still in the entitlement process and being evaluated but are located in developed areas in or near the City of Sanger and will not involve the conversion of agricultural lands.

As required by Mitigation Measure AG-1 the Project shall conserve agricultural land by acquiring an ACE on 351 acres of Important Farmland as classified by DOC's FMMP to mitigate for the 351 acres of Important Farmland on the Project site to be converted to non-agricultural use. After mitigation impacts to farmland are less than significant. Therefore, the loss of agricultural lands from the Project in conjunction with the existing or proposed conversion of farmland associated with the related projects identified in Table 3-1 would be considered less than cumulatively significant.

Would the Project, when considered in conjunction with other cumulative projects, conflict with existing zoning for agricultural use, or a Williamson Act contract? (CEQA Guidelines Threshold (b))

The County zoning ordinance makes provisions for allowing approval of a mining operation and Mining Reclamation Plan subject to approval of a CUP. This is intended to conserve areas identified as containing valuable mineral deposits, and ensure that mineral resources are recovered efficiently and safely with minimal disruption to surrounding land uses.

Cumulative Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel and Santa Fe Aggregates) have completed the entitlement phase and appropriate approvals have been received from the County. It was also determined that these projects would not be in conflict with the Williamson Act.

Cumulative Projects 5 through 7 (Sanger Crossing Apartment, Pitman farms, and Family Dollar Store) are still in the entitlement process and being evaluated but are located in developed areas in or near the City of Sanger and will not involve the conversion of agricultural lands. Overall cumulative impacts associated with these effects are less than significant.

The Project is located in MRZ-2 zone and has construction grade aggregate of regional significance. The Project would require County approval of a CUP and would not be in conflict with the Williamson Act. Therefore project-related and cumulative impacts to agricultural zoning and the Williamson Act would be considered less than significant and the Project would not make a cumulatively considerable contribution to these effects.

Would the Project, when considered in conjunction with other cumulative projects, involve other changes in the existing environment which, due to their location or nature, could result in substantial conversion of Farmland to non-agricultural use, substantially impair the productivity of adjacent agricultural areas, or result in conversion of forest land to non-forest use? (CEQA Guidelines Threshold Criteria (e))

The Project and cumulative projects 1- 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel and Santa Fe Aggregates) would provide raw materials to meet the demand for local and regional construction projects. The operations of these projects would respond to local demand, not cause demand to increase. These projects would not result in other areas being converted to non-agricultural land use. Cumulative Projects 5 through 7 (Sanger Crossing Apartment, Pitman farms, and Family Dollar Store) are located in the urban area of Sanger and would not result in the conversion of agricultural lands. None of the projects would involve the conversion of forest land. Therefore, the Project-related and cumulative impacts would not be expected to induce the conversion of agricultural or forest lands to other uses and are considered less than significant, and the Project would not make a cumulatively considerable contribution to these effects.

3.2.8 Alternatives to Significant Effects

No Project Alternative

The No Project Alternative would avoid all Project-related impacts associated with the conversion of agricultural lands and could reduce the potential significant impacts associated with the Project. This alternative would also result in the significant loss of important mineral resources known to occur in an area classified as a MRZ-2 zone. The No Project Alternative's impacts would be greater than the Project regarding mineral resource conservation because the recovery of a known valuable resource would be eliminated.

Reduced Annual Production Alternative

This alternative would evaluate the potential impacts from artificially limiting the proposed production by a given amount. This alternative would not result in any changes that would reduce the amount (acres) of land conversion; therefore, it would not reduce potential impacts associated with the Project. This alternative would also result in the loss of mineral resources known to occur in an area classified as a MRZ-2 zone. The Reduced Annual Production Alternative's impacts would be greater than the Project regarding mineral resource conservation because the recovery of a known resource would be reduced.

Reduced Project Size Alternative

This alternative would evaluate the potential impacts from artificially reducing the Project footprint by some stated amount. This alternative would reduce the number of acres that would be converted from agriculture by 40 acres and would therefore reduce the potential significant impacts associated with the Project. This alternative would also result in the loss of mineral resources known to occur in an area classified as a MRZ-2 zone. The Reduced Project Size Alternative's impacts would be greater than the Project regarding mineral resource conservation because the recovery of a known resource would be reduced.

Reduced Mining Depth Alternative

This alternative would evaluate the potential impacts from artificially reducing the mining depth by some stated amount. The entire surface acreage of initial agricultural land conversion would not change from the Project. However, this alternative would increase the amount of agricultural land reclaimed by approximately 104 acres. The resulting increase in agricultural land reclamation would be approximately 39 percent more than would be reclaimed to agricultural uses under the Project. This alternative would reduce permanent agricultural land conversion. This alternative would also result in the loss of approximately 45 million tons of mineral resources known to occur in an area classified as a MRZ-2 zone. The Reduced Mining Depth Alternative's impacts would be greater than the Project regarding mineral resource conservation because the recovery of a known resource would be reduced by approximately 45 million tons.

Different Phasing Alternative

This alternative would evaluate the potential impacts from revising the phasing plan. This alternative would not result in any change to potential impacts associated with land conversion; therefore, it would not reduce potential impacts associated with the Project.

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3.3 AIR QUALITY

3.3.1 Introduction

This section of the DEIR provides an evaluation of potential air quality impacts that could occur with implementation of the Proposed Project. The analysis is based on the following: *Emission Inventory and Air Quality Impact Analysis*, (Dudek, 2013a); *Health Risk and Odor Assessment*, (Dudek, 2013b); and *Supplemental Health Risk Assessment*, (Dudek, 2013c). These documents are included in Appendix D.

3.3.2 Environmental Setting

The environmental setting includes health effects of air pollutants and descriptions of regional, vicinity and Project site air quality. Ambient Air Quality Standards (AAQS) and Reference Exposure Levels (REL) that are used for health risk assessment are designated for each pollutant at a level where no “adverse health effect” would occur to sensitive populations.

The Office of Environmental Health Hazard Assessment (OEHHA) relies upon the definition of “adverse health effect” published by American Thoracic Society. ATS published a definition in 1985 and then amended the definition in 2000 to address issues not covered by the 1985 definition. From the 1985 definition “adverse respiratory health effect” means:

Medically significant physiologic or pathologic changes generally evidenced by one or more of the following:

1. *Interference with the normal activity of the affected person or persons;*
2. *Episodic respiratory illness;*
3. *Incapacitating illness;*
4. *Permanent respiratory injury; and/or*
5. *Progressive respiratory dysfunction. (OEHHA, 6/2004).*

As discussed by OEHHA, the 2000 ATS publication recommended that the following “dimensions” of adverse effects be considered when determining an adverse health effect:

1. *Biomarkers: These should be considered, however it must be kept in mind that few biomarkers have been validated sufficiently to establish their use for defining a point at which a response becomes adverse, consequently, not all changes in biomarkers should necessarily be considered adverse.*
2. *Quality of life: In recent years, decreased health-related quality of life has become widely accepted as an adverse health effect. The review committee concluded that reduction in quality of life, whether in healthy persons or persons with chronic respiratory disease, should be considered as an adverse effect.*

3. *Physiological impact: The committee recommended that small, transient reductions in pulmonary function should not necessarily be regarded as adverse, although permanent loss of lung function should be considered adverse. The committee also recommended that reversible loss of lung function in conjunction with symptoms should be considered adverse.*
4. *Symptoms: Air pollution-related symptoms associated with reduced quality of life or with a change in clinical status (i.e., requiring medical care or a change in medications) should be considered adverse at the individual level. At the population level, the committee suggested that any detectable increase in symptom frequency should be considered adverse.*
5. *Clinical outcomes: Detectable effects of air pollution on clinical measures should be considered adverse. More specifically, the ATS committee cited as examples increases in emergency department visits for asthma or hospitalizations for pneumonia, at the population level, or an increased need to use bronchodilator medication, at the individual level. The committee recommended that: “no level of effect of air pollution on population-level clinical indicators can be considered acceptable.”*
6. *Mortality: Increased mortality should clearly be judged as adverse.*
7. *Population health versus individual risk: The committee concluded that a shift in risk factor distribution, and hence the risk profile of an exposed population, should be considered adverse when the relationship between the risk factor and the disease is causal, even if there is no immediate occurrence of obvious illness. (OEHHA, 6/2004).*

Based on these recommendations, many health outcomes found to be associated with criteria pollutants could be considered adverse including pulmonary function changes accompanied by symptoms, pulmonary function changes and respiratory symptoms that reduce quality of life, large changes in pulmonary function, clinical outcomes such as emergency department visits for asthma, hospitalization for respiratory and cardiovascular disease, and mortality. In addition, outcomes such as increase in airway reactivity and inflammation may be considered adverse if they signify increases in the potential risk profile of the population.

With regard to sensitivity, the 1970 Clean Air Act recognized that some persons were so ill as to need controlled environments, e.g., persons in intensive care units or newborn infants in nurseries; the act stated that the standards might not necessarily protect such individuals. It further stated, however, that the standards should protect “particularly sensitive citizens such as bronchial asthmatics and emphysematics who in the normal course of daily activity are exposed to the ambient environment. (ATS, 2000).

Finally, according to ATS, research now shows that some highly susceptible individuals may respond to common exposures at or close to natural background pollutant levels that are often unavoidable.

Ozone

Ozone (O₃) (smog) is formed by photochemical reactions between oxides of nitrogen (NO_x) and volatile organic compounds (VOC), rather than being directly emitted. The SJVAPCD Health-Based Implementation Strategy prioritizes NO_x reductions over VOC reductions because NO_x reductions would have greater effect on reducing ozone concentrations and be more protective of public health.

O₃ is a pungent, colorless gas typical of Southern California smog. Elevated O₃ concentrations result in reduced lung function, particularly during vigorous physical activity. This health effect is particularly acute in sensitive receptors such as the sick, the elderly, and young children. O₃ levels peak during summer and early fall.

Breathing ground-level ozone can result in a number of health effects that are observed in broad segments of the population. Some of these effects include:

- Induction of respiratory symptoms;
- Decrements in lung function; and
- Inflammation of airways.

Respiratory symptoms can include:

- Coughing;
- Throat irritation;
- Pain, burning, or discomfort in the chest when taking a deep breath; and
- Chest tightness, wheezing, or shortness of breath.

In addition to these effects, evidence from observational studies strongly indicates that higher daily ozone concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that ozone can make asthma symptoms worse and can increase sensitivity to asthma triggers.

Carbon Monoxide

Carbon Monoxide (CO) is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions.

The severity of symptoms due to CO exposure increases with the blood carboxyhemoglobin (COHb) level. The first signs of CO exposure include mild headache and breathlessness with moderate exercise. Continued exposure may lead to more severe headache, irritability, impaired judgment and memory, and rapid onset of fatigue.

Persons with cardiovascular disease, including those with angina, persons with chronic obstructive pulmonary disease, persons with anemia, and fetuses may be more sensitive to the adverse effects of carbon monoxide exposure. The fetuses of pregnant women, especially those mothers exercising vigorously, may be especially vulnerable due to the much higher affinity of fetal hemoglobin for CO compared to adult hemoglobin.

Persons exposed to methylene chloride are more sensitive to the effects of CO exposure because CO is a metabolite of methylene chloride. Smokers will experience an additional burden of COHb since their carboxyhemoglobin levels are already elevated by smoking.

Nitrogen Oxides

Nitrogen dioxide NO_2 is a reddish brown gas, and nitric oxide (NO) is a colorless, odorless gas. They are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_x . NO_x is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_x decreases lung function and may reduce resistance to infection.

Acute exposure to NO_2 has caused pulmonary edema, pneumonitis, and bronchitis. NO_2 is considered a relatively insoluble, reactive gas, such as phosgene and ozone. Once inhaled, it reaches the lower respiratory tract, affecting mainly the bronchioles and the adjacent alveolar spaces, where it may produce pulmonary edema within hours.

Sulfur Dioxide

Sulfur Dioxide (SO_2) is a colorless, irritating gas formed primarily from combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

Both controlled laboratory studies and epidemiology studies have shown that people with asthma and children are particularly sensitive to and are at increased risk from the effects of SO_2 air pollution. Asthmatic subjects exposed to levels of SO_2 within regulatory standards have demonstrated increased respiratory symptoms such as shortness of breath, coughing and wheezing, and decrements in lung function.

Lead

Formerly a component in gasoline, lead can be found in old paints and coatings, plumbing, and a variety of other materials. Once in the bloodstream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead.

Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles floating in the air. Some particles are large or dark enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. PM₁₀ refers to particles less than or equal to 10 microns in aerodynamic diameter. PM_{2.5} refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM₁₀.

There are sources of PM₁₀ in both urban and rural areas. PM₁₀ and PM_{2.5} are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles, power plants, industrial processing, wood burning stoves and fireplaces, wildfires, dust from roads, construction, landfills, and agriculture, and fugitive windblown dust. Because particles originate from a variety of sources, their chemical and physical compositions vary widely.

PM₁₀ and PM_{2.5} particles are small enough to be inhaled into, and lodge in, the deepest parts of the lung, evading the respiratory system's natural defenses. Health problems occur as the body reacts to these foreign particles.

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non health-related effects include reduced visibility and soiling of buildings. PM₁₀ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM₁₀ and PM_{2.5} can aggravate respiratory disease, and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM₁₀. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM₁₀ exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM₁₀ can also damage manmade materials and is a major cause of reduced visibility in many parts of the U.S.

3.3.2.1 Regional Setting

The Project site is located in the San Joaquin Valley within the central portion of the San Joaquin Valley Air Basin (SJVAB or basin) under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The District's jurisdictional area is shown on Figure 3.3-1.

Air pollution is directly related to several factors including a region's topographic features. The SJVAB is defined by the Sierra Nevada mountain range in the east (8,000 to 14,000 feet in elevation), the Coast Range in the west (averaging 3,000 feet in elevation), and the Tehachapi Mountains in the south (6,000 to 8,000 feet in elevation). The valley is basically flat with a slight downward gradient to the northwest. The valley opens to the Pacific Ocean at the Carquinez Strait, where the San Joaquin-Sacramento Delta empties into San Francisco Bay.

Although marine air generally flows into the basin from the San Joaquin River delta, the region's topographic features restrict air movement within the basin. The Coast Range hinders wind access into the valley from the west, the Tehachapi Mountains prevent southerly passage of air, and the Sierra Nevada mountain range to the east is a barrier to air movement. These topographic features result in weak air flow, which becomes blocked vertically by high barometric pressure over the valley. As a result, the SJVAB is susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500 to 3,000 feet).

During the summer season, wind usually originates at the north end of the valley, through Tehachapi Pass into the Mojave Desert Air Basin. During the winter, wind occasionally originates in the south end of the valley and flows in a north-northwesterly direction. Also during the winter months, the valley experiences light, variable winds, which are usually less than 10 miles per hour (mph). Low wind speeds combined with low inversion layers in the winter create a climate conducive to the accumulation of carbon monoxide (CO) and suspended particulate matter (PM₁₀).

According to Western Regional Climate Center, the Fresno Airport, located approximately 12 miles east of the Project Site, is the nearest meteorological station. Average monthly temperatures range from a minimum of 37°F to a maximum of 98°F. December and January are typically the coldest months with July and August the warmest in Fresno County.

The annual rainfall totals approximately 13.7 inches and mostly occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers over the Sierra Nevada mountain range.



3.3.2.2 Vicinity Setting

The Project site is approximately 833-acres in size and is located 1.5 miles southeast of the City of Sanger, immediately east and north of the Kings River and north and south of Goodfellow Avenue between the Kings River and Riverbend Avenue.

The SJVAPCD maintains ambient air quality monitoring stations throughout the SJVAB in order to measure compliance with Federal standards. All air pollutants are not monitored at each station; thus, data from the closest representative station that monitors a specific pollutant are used as background concentrations for purposes of impact assessment.

The closest ambient air quality monitoring station to the Project site is the Parlier station. This station is located approximately 4.2 miles south of the Project site and measures O_3 and NO_2 . The station is constructed to monitor at a neighborhood scale covering an area between 0.5 and 4.0 kilometers in range. Data is collected for the purpose of observing the high concentration from regional transport of pollutants.

CO and PM_{10} are recorded at the Fresno–Drummond Street monitoring station. This station is located approximately 12.6 miles west of the Project site. The station is constructed to monitor at a neighborhood scale covering an area between 0.5 and 4.0 kilometers in range. Data is collected for the purpose of observing the concentration experienced by the population in the community.

$PM_{2.5}$ is recorded at the Fresno–Pacific monitoring station. This station is located approximately 12.2 miles northwest of the Project site. The station is constructed to monitor at a neighborhood scale covering an area between 0.5 and 4.0 kilometers in range. Data is collected for the purpose of observing the concentration experienced by the population in the community. Data from this station is collected seasonally.

SO_2 is recorded at the Fresno–First Street monitoring station. This station is located approximately 15.5 miles northwest of the Project site. The station is constructed to monitor at a neighborhood scale covering an area between 0.5 and 4.0 kilometers in range. Data is collected for the purpose of observing the highest concentration experienced by the population in the community. Data is collected hourly at this station.

Ambient concentrations and number of days when the primary air quality standards were exceeded in 2008-2012 are presented in Table 3.3-1 and Table 3.3-2. A summary of all ambient air quality standards is presented in Table 3.3-3.

Table 3.3-1 Ambient Air Quality in the Project Area

Concentration Averaging Period	Monitoring Station	Ambient Air Quality Standard	2008	2009	2010	2011	2012
Ozone							
Max. 1-hr	Parlier	0.09 ppm	0.137	0.121	0.139	0.134	0.126
Max. 8-hr		0.070 ppm (state)	0.117	0.096	0.102	0.097	0.097
		0.075 ppm (fed.)	0.116	0.095	0.102	0.096	0.097
Nitrogen Dioxide							
Max. 1-hr	Parlier	0.18 ppm (state)	0.049	0.049	0.040	0.044	0.042
		0.100 ppm (fed,)					
Annual		0.030 ppm (state)	0.009	ND	ND	ND	ND
		0.053 ppm (fed.)					
Carbon Monoxide							
Max. 1-hr	Fresno– Drummond	20 ppm (state)	3	3	2	3	3
		35 ppm (fed.)					
Max. 8-hr		9.0 ppm (state)	2.14	1.95	1.45	1.73	ND
		9 ppm (fed.)	2.14	1.95	1.45	1.73	ND
Respirable Particulate Matter (PM ₁₀)							
Max. 24-hr (state)	Fresno– Drummond	50 µg/m ³	99.5	82.2	66.5	91.3	114.3
Max. 24-hr (fed.)		150 µg/m ³	98.8	84.0	68.1	86.1	114.0
Annual (state)		20 µg/m ³	40.5	35.3	ND	32.3	ND
Fine Particulate Matter (PM _{2.5})							
Max. 24-hr (fed.)	Fresno– Hamilton and Winery	35 µg/m ³	46.6	59.6	46.4	77.8	59.0
Annual (state)		12 µg/m ³	16.5	ND	ND	ND	ND
Annual (fed.)		15.0 µg/m ³	16.5	14.6	13.4	15.4	12.7
Sulfur Dioxide							
Max. 1-hr	Fresno-First Street	0.075 ppm (fed.)	0.012	0.013	0.015	0.016	0.009
Max. 24-hr ^a		0.04 ppm (state)	0.003	0.005	0.003	0.004	0.002
Annual		0.030 ppm (fed.)	0.001	0.001	0.000	ND	ND

Source: California Air Resources Board (CARB) 2013; EPA 2013 (1-hour CO, 1-hour and 1-hour SO₂).

Max. = Maximum. Hr = Hour. Fed. = Federal. ppm = parts per million. µg/m³ = micrograms per cubic meter.

ND – insufficient data available to determine. NA – data are not available from the listed sources.

Table 3.3-2. Number of Days Exceeding Air Quality Standards

Monitoring Site	Year	Days Exceeding State	Days Exceeding State	Days Exceeding Federal	Days Exceeding State	Days Exceeding Federal
		1-Hour O ₃	8-Hour O ₃	8-Hour O ₃	24-Hour PM ₁₀ ^a	24-Hour PM _{2.5} ^a
Parlier	2008	36	73	51		
	2009	21	49	26		
	2010	20	47	30		
	2011	27	65	43		
	2012	32	89	62		
Fresno-Drummond	2008				126.3 (21)	
	2009				71.8 (12)	
	2010				ND (8)	
	2011				72.0 (12)	
	2012				ND(8)	
Fresno-Hamilton and Winery	2008					37.2 (11)
	2009					35.0 (11)
	2010					9.5 (3)
	2011					38.0 (10)
	2012					22.7(7)

Source: CARB 2013. ND – not determined

- a) Measurements of PM₁₀ and PM_{2.5} are usually collected every 6 days and 3 days, respectively. “Number of days exceeding the standards” are mathematical estimates. The numbers in parentheses are the measured number of samples that exceeded the standard.

In summary, CO and NO₂ levels have not exceeded State or Federal standards over the past five years. O₃ levels exceeded the State one-hour and eight-hour standards and the Federal eight-hour standard in each of the past five years. PM₁₀ levels exceeded only the State standard in at least three of the last five years. PM_{2.5} levels exceeded the Federal standard for the past five years. SO₂ levels did not exceed the Federal or State standards.

3.3.2.3 Project Site Setting

As explained above, air quality monitoring stations are located within urban areas and ambient measurements generally reflect community exposure levels. Air quality at the Project site is assumed to be better than air quality in the Project vicinity because the Project site and surrounding lands are characterized as rural with few air emissions sources. Accordingly, the Project site is generally characterized as having lower concentrations of air pollutants than more urban areas where there are more emissions sources and where ambient measurements are often collected.

Table 3.3-3 State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹		National Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)		
Respirable Particulate Matter (PM ₁₀) ⁸	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		—		
Fine Particulate Matter (PM _{2.5}) ⁸	24 Hour	—	—	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12.0 µg/m ³	15 µg/m ³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		—	—	
Nitrogen Dioxide (NO ₂) ⁹	1 Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemi-luminescence	100 ppb (188 µg/m ³)	—	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		0.053 ppm (100 µg/m ³)	Same as Primary Standard	
Sulfur Dioxide (SO ₂) ¹⁰	1 Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m ³)	
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (for certain areas) ¹⁰	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas) ¹⁰	—	
Lead ^{11,12}	30 Day Average	1.5 µg/m ³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m ³ (for certain areas) ¹²	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m ³		
Visibility Reducing Particles ¹³	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹¹	24 Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

Source: CARB, June 4, 2013 with updated annual PM2.5 NAAQS.

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu\text{g}/\text{m}^3$ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of CARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 $\mu\text{g}/\text{m}^3$ to 12.0 $\mu\text{g}/\text{m}^3$. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 $\mu\text{g}/\text{m}^3$, as was the annual secondary standard of 15 $\mu\text{g}/\text{m}^3$. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 $\mu\text{g}/\text{m}^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
9. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
10. On June 2, 2010, a new 1-hour SO₂ standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
11. CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
12. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu\text{g}/\text{m}^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
13. In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

3.3.3 Regulatory Setting

Both the State and the Federal government have established health-based Ambient Air Quality Standards (AAQS) for six air pollutants. These pollutants are carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead, and suspended particulate matter (PM_{2.5} and PM₁₀). Table 3.3-3 shows both Federal and State standards for these criteria pollutants. The State AAQS are generally more stringent than the Federal AAQS.

The SJVAPCD, together with the California Air Resources Board (CARB), maintains ambient air quality monitoring stations in the Fresno County area. The attainment status in the Fresno County area of the SJVAB is shown in Table 3.3-4.

Table 3.3-4 San Joaquin Valley Attainment Status

Pollutant	Federal Designation ^a	State Designation ^b
Ozone - One hour	No Federal Standard ^c	Nonattainment ^d
Ozone - Eight hour	Extreme ^e	Nonattainment
PM ₁₀	Attainment ^f	Nonattainment
PM _{2.5}	Nonattainment ^g	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/ Unclassifiable
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate) ^h	Attainment/Unclassified	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassifiable
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassifiable
Vinyl Chloride ^h	No Federal Standard	Attainment

Sources: EPA, 2012 and CARB, 2012.

a. See 40 CFR, Part 81

b. See CCR Title 17 Sections 60200-60210

c. Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the Federal 1-hour ozone standard, including associated designations and classifications. However, EPA had previously classified the SJVAB as extreme nonattainment for this standard. Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

d. CARB has not issued area classification based on the state 8-hour standard. The previous classification for the 1-hour ozone standard was severe.

e. Though the SJVAB was initially classified as “nonattainment/Serious” for the 1997 8-hour ozone standard, EPA approved a reclassification to “extreme nonattainment” on May 5, 2010 (effective June 4, 2010).

f. On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM₁₀ NAAQS and approved the PM₁₀ Maintenance Plan.

g. The Valley is designated nonattainment for the 1997 Federal PM_{2.5} standards. EPA released final designations for the 2006 PM_{2.5} standards in December 2008 (effective in 2009), designating the Valley as nonattainment for the 2006 PM_{2.5} standards.

h. CARB has identified Pb, vinyl chloride, and toxic air contaminants with no threshold level of exposure for adverse health effects determined.

Data collected at permanent monitoring stations are used by the EPA to classify regions as “attainment” or “nonattainment,” depending on whether the regions met the requirements stated in the primary NAAQS. The San Joaquin Valley is a single air quality nonattainment area containing six metropolitan planning organizations and two rural transportation planning agencies that conduct transportation planning activities within the valley. The EPA has designated the Fresno Council of Governments (FCOG) as an agency responsible for ensuring compliance with the air quality planning requirements of the Federal Clean Air Act (CAA) for the Fresno County area of the SJVAB.

Ozone

For the first time in recorded history, in 2013, the Valley had zero violations of the (revoked) 1-hour ozone standard established by EPA under the Federal Clean Air Act. The Valley now meets the 1-hour ozone standard based on the most recent three year period air monitoring data (2011-2013).

On May 6, 2014, the District submitted a formal request that the U.S. EPA determine that the Valley has attained the Federal 1-hour ozone standard. Per Federal requirements, the District’s submittal includes a clean data finding and a finding that attainment is due to permanent and enforceable emissions reductions.

The SJVAB is designated as an extreme ozone nonattainment area for the U.S. EPA 2008 8-hour ozone standard of 75 parts per billion (ppb). The plan to address this standard is expected to be due to EPA in 2015/2016. Addressing the 2008 8-hour ozone standard will pose a tremendous challenge for the Valley, given the naturally high background ozone levels and ozone transport into the Valley.

Although the Federal one-hour O₃ ambient air quality standard, including associated designations and classifications has been revoked, the SJVAB continues to remain subject to certain CAA requirements for the Federal one-hour standard through the anti-backsliding provisions in EPA’s rule implementing the 8-hour O₃ standards. Currently, EPA is reconsidering the 8-hour ozone standard and has proposed 0.070 ppm to be the new standard.

Carbon Monoxide

The SJVAB is designated as attainment/unclassifiable for Federal CO standards and attainment for State CO standards.

Nitrogen Dioxide

The entire SJVAB is designated as attainment/unclassifiable under Federal standards and attainment under State standards. In 2010, EPA established the 1-hour standard of 100 ppb for the 3-year average of the 98th percentile of the yearly distribution of 1-hour daily maximum NO₂ concentrations. This concentration limit is less than the State 1-hour standard but the State standard is the maximum hour of the year rather than an average.

Sulfur Dioxide

The SJVAB is designated as unclassifiable for Federal SO₂ standards and attainment for State SO₂ standards. In 2010, EPA revised the primary SO₂ NAAQS by establishing a new 1-hour standard at a level of 75 ppb. EPA revoked the two existing primary standards because they would not provide additional public health protection given a 1-hour standard at 75 ppb.

Lead

The entire SJVAB is in attainment for Federal and State lead standards.

Particulate Matter

The entire SJVAB is a nonattainment area for Federal and State PM₁₀ and PM_{2.5} standards. The EPA issued the final PM_{2.5} implementation rule in fall 2004 and issued the final designations on December 14, 2004. On December 14, 2012, U.S. EPA lowered the Federal primary PM_{2.5} annual standard from 15.0 micrograms per cubic meter to 12.0 micrograms per cubic meter and eliminated the annual PM₁₀ standard. On November 21, 2013, CARB Board approved staff's recommended nonattainment area boundaries for the 2012 revised Federal annual PM_{2.5} standard.

3.3.3.1 Federal**Criteria Pollutants**

EPA regulations applicable to sources at the Project include those related to new sources. Emissions from stationary sources would not trigger a Federal operating permit under Title V of the CAA.

New Source Performance Standards – Title 40, Code of Federal Regulations (CFR), Part 60

Subpart I (Standards of Performance for Asphalt Hot-Mix Facilities) prohibits any new hot-mix asphalt facility from discharging gases that contain particulate matter in excess of 90 milligrams per dry standard cubic meter (mg/dscm) (0.04 grain per dry standard cubic foot [gr/dscf]) and/or exhibit 20% opacity or greater.

Subpart OOO (Nonmetallic Mineral Processing Plants) is applicable to new, modified, or reconstructed nonmetallic mineral processing facilities (with certain exceptions, such as fixed sand and gravel plants and crushed stone plants with capacities of 25 tons per hour or less, or portable sand and gravel plants and crushed stone plants with capacities of 150 tons per hour or less). Subpart OOO restricts emissions from affected facilities equipped with capture systems used to capture and transport particulate matter to a control device. Emissions are prohibited in excess of 0.032 grams per dry standard cubic meter (g/dscm) (0.014 g/dscf), and from exhibiting visible emissions based on quarterly monitoring. Subpart OOO also prohibits the discharge of any fugitive emissions from affected facilities without capture systems and the discharge of fugitive emissions escaping capture systems that exhibit greater than 7% opacity (12% for crushers without capture systems).

Hazardous Air Pollutants

The Federal Clean Air Act Amendments (CAAA) Section 112(k) requires the EPA to reduce hazardous air pollutant (HAP) risks in urban areas. The EPA's strategy for reducing these risks is discussed in the *Integrated Urban Air Toxics Strategy*. Among the major new programs are the operating permits program (Title V) and provisions to phase out ozone-depleting substances (Title VI). Existing programs that have seen major changes due to the amendments include attainment provisions for the National Emissions Standards for Hazardous Air Pollutants (NESHAP) program.

The provisions in Title I that address the control of HAP emissions, or air toxics, include provisions for the promulgation of NESHAP, or maximum achievable control technology (MACT) standards, as well as several related programs to enhance and support the NESHAP Program. The activities and responsibilities required under Section 112 directly affect not only the EPA but State and local regulatory agencies as well. In addition to air quality agencies which administrate the majority of Section 112, storage of acutely hazardous materials above threshold quantities is administrated under Section 112(r) by the State Office of Emergency Management through the local Certified Unified Permitting Agencies (CUPAs).

3.3.3.2 State

Criteria Pollutants

The State began to set California ambient air quality standards (CAAQS) in 1969. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are also listed in Table 3.3-3.

Originally, there were no attainment deadlines for the CAAQS. However, the California Clean Air Act (CCAA) provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas (except PM₁₀ and PM_{2.5}) in the State to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows: moderate, if attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all.

The attainment plans require a minimum 5 percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. The Fresno County area of the SJVAB is currently classified as a nonattainment area for three criteria pollutants: O₃, PM₁₀, and PM_{2.5}.

Hazardous Air Pollutants

The CARB Statewide comprehensive air toxics program was established in the early 1980s. The Toxic Air Contaminant Identification and Control Act (AB 1807, 1983) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987)

requires a Statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

Under AB 1807, CARB is required to use certain criteria in the prioritization for the identification and control of air toxics. In selecting substances for review, CARB must consider criteria relating to “the risk of harm to public health, amount or potential amount of emissions, manner of, and exposure to, usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community.” (Cal. Health & Safety Code § 39660(f)). AB 1807 also requires CARB to use available information gathered from the AB 2588 program to include in the prioritization of compounds.

Under AB 2588, facilities are required to report air toxic emissions, ascertain health risks and notify nearby residents of significant risks. In September 1992, the Hot Spots Act was amended by Senate Bill 1731 which required facilities that pose a significant health risk to reduce their risk through a risk management plan. In SJVAPCD, risk management plans and mitigations are required for facilities that exceed 5.0 hazard index (H.I.). Notification of individuals exposed is required for facilities that expose the public to risk greater than 1.0 H.I.

The following CARB regulations would be applicable to sources at the Project:

Idling of Commercial Heavy Duty Trucks (13 CCR §2485)

In July 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to control emissions from idling trucks. The ATCM prohibits idling for more than 5 minutes for all commercial trucks with a gross vehicle weight rating over 10,000 pounds. The ATCM contains an exception that allows trucks to idle while queuing or involved in operational activities.

In-Use Off-Road Diesel-Fueled Fleets (13 CCR §2449 et seq.)

In July 2007, CARB adopted an ATCM for in-use off-road diesel vehicles. This regulation required that specific fleet average requirements are met for NO_x emissions and for particulate matter emissions. Where average requirements cannot be met, Best Available Control Technology (BACT) requirements apply. The regulation also included several recordkeeping and reporting requirements. In response to AB 8 2X, the regulations were revised in July 2009 (effective December 3, 2009) to allow a partial postponement of the compliance schedule in 2011 and 2012 for existing fleets. On December 17, 2010, CARB adopted additional revisions to further delay the deadlines reflecting reductions in diesel emissions due to the poor economy and overestimates of diesel emissions in California. The revisions delayed the first compliance date until no earlier than January 1, 2014, for large fleets, with final compliance by January 1, 2023. The compliance dates for medium fleets would be delayed until an initial date of January 1, 2017, and final compliance date of January 1, 2023. The compliance dates for small fleets would be delayed until an initial date of January 1, 2019, and final compliance date of January 1, 2028. Correspondingly, the fleet average targets were made more stringent in future compliance years. The revisions would also accelerate the phase-out of equipment with older equipment added to existing large and medium fleets over time, requiring the addition of Tier 2 or higher engines starting on March

1, 2011, with some exceptions; Tier 2 or higher engines on January 1, 2013, without exception; and Tier 3 or higher engines on January 1, 2018 (January 1, 2023, for small fleets).

On October 28, 2011 (effective December 14, 2011), the Executive Officer of CARB approved amendments to the regulation. The amendments included revisions to the applicability section and additions and revisions to the definition. The initial date for requiring the addition of Tier 2 or higher engines for large and medium fleets, with some exceptions, was revised to January 1, 2012. New provisions would allow removal of emission control devices for safety or visibility purposes. The regulation was amended to combine the particulate matter and NO_x fleet average targets under one, instead of two, sections. The amended fleet average targets are based on the fleet's NO_x fleet average, and the previous section regarding particulate matter performance requirements was deleted completely. The BACT requirements, if a fleet cannot comply with the fleet average requirements, were restructured and clarified. Other amendments to the regulations included minor administrative changes to the regulatory text.

In-Use On-Road Diesel-Fueled Vehicles (13 CCR §2025)

On December 12, 2008, CARB adopted an ATCM to reduce NO_x and particulate matter emissions from most in-use on-road diesel trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The original ATCM regulation required fleets of on-road trucks to limit their NO_x and particulate matter emissions through a combination of exhaust retrofit equipment and new vehicles. The regulation limited particulate matter emissions for most fleets by 2011, and limited NO_x emissions for most fleets by 2013. The regulation did not require any vehicle to be replaced before 2012, and never required all vehicles in a fleet be replaced. In December 2009, the CARB Governing Board directed staff to evaluate amendments that would provide additional flexibility for fleets adversely affected by the poor California economy. On December 17, 2010, CARB revised this ATCM to delay its implementation along with limited relaxation of its requirements. Starting on January 1, 2015, lighter trucks with a GVWR of 14,001 to 26,000 pounds with 20-year-old or older engines would need to be replaced with newer trucks (2010 model year emissions equivalent as defined in the regulation). Trucks with a GVWR greater than 26,000 pounds with 1995 model year or older engines must be replaced as of January 1, 2015. Trucks with 1996–2006 model year engines must install a Level 3 (85% control) diesel particulate filter starting on January 1, 2012, to January 1, 2014, depending on the model year, and then must be replaced after 8 years. Trucks with 2007–2009 model year engines have no requirements until 2023, at which time they must be replaced with 2010 model year emissions equivalent engines as defined in the regulation. Trucks with 2010 model year engines would meet the final compliance requirements. The ATCM provides a phase-in option under which a fleet operator would equip a percentage of trucks in the fleet with diesel particulate filters, starting at 30% as of January 1, 2012, and increasing to 100% by January 1, 2016. Under each option, delayed compliance is granted to fleet operators who have or will comply with requirements before the required deadlines.

On September 19, 2011 (effective December 14, 2011), the Executive Officer of CARB approved amendments to the regulations, including revisions to the compliance schedule for vehicles with a GVWR of 26,000 pounds

or less to clarify that *all* vehicles must be equipped with 2010 model year emissions equivalent engines by 2023. The amendments included revised and additional credits for fleets that have downsized; implement early particulate matter retrofits; incorporate hybrid vehicles, alternative-fueled vehicles, and vehicles with heavy-duty pilot ignition engines; and implement early addition of newer vehicles. The amendments included provisions for additional flexibility, such as for low-usage construction trucks, and revisions to previous exemptions, delays, and extensions. Other amendments to the regulations included minor administrative changes to the regulatory text, including recordkeeping and reporting requirements related to other revisions.

3.3.3.3 Local

San Joaquin Valley Air Pollution Control District

The 1976 LewisPresley Air Quality Management Act established the SJVAPCD and other air districts throughout the State. The Federal Clean Air Act Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the Federal standards in nonattainment areas of the state.

CARB coordinates and oversees both State and Federal air pollution control programs in California. CARB oversees activities of local air quality management agencies and is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for Federal EPA approval. CARB maintains air quality monitoring stations throughout the State in conjunction with local air districts. Data collected at these stations are used by CARB and EPA to classify air basins as “attainment” or “nonattainment” with respect to each pollutant and to monitor progress in attaining air quality standards. ARB has divided the State into 15 air basins. Significant authority for air quality control within them has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans. The CCAA provides the SJVAPCD with the authority to manage transportation activities at indirect sources and regulate stationary source emissions. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. An example of this would be the motor vehicles at an intersection, a mall, and on highways. As a State agency, CARB regulates motor vehicles and fuels for their emissions.

The SJVAPCD and FCOG are responsible for formulating and implementing the air quality plans for the Fresno County area of the SJVAB. The SJVAPCD has adopted several attainment plans to achieve State and Federal air quality standards to comply with CCAA and CAAA requirements. The SJVAPCD must continuously monitor its progress in implementing attainment plans and must periodically report to CARB and the EPA. It must also periodically revise its attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the CCAA and CAAA.

Extreme 1-Hour Ozone Attainment Demonstration Plan

This plan, adopted by the SJVAPCD board in 2004, sets forth measures and emission reduction strategies designed to attain the Federal 1-hour ozone standard by November 15, 2010, as well as an emissions

inventory, outreach, and Rate of Progress demonstration. This plan was approved by the EPA on March 8, 2010; however, the EPA's approval was subsequently withdrawn effective November 26, 2012, in response to a decision issued by the U.S. Court of Appeals for the Ninth Circuit (*Sierra Club v. EPA*, 671 F.3d 955) remanding EPA's approval of these State Implementation Plan revisions. Concurrent with EPA's final rule, CARB is withdrawing the 2004 plan. On May 6, 2014, the District submitted a formal request that the U.S. EPA determine that the Valley has attained the Federal 1-hour ozone standard.

2007 8-Hour Ozone Plan

This plan sets forth measures and a "dual path" strategy to attain the Federal 8-hour ozone standard for the SJVAB by reducing emissions on ozone and particulate matter precursors. The plan also includes provisions for improved pollution control technologies for mobile and stationary sources, as well as an increase in state and Federal funding for incentive-based measures to reduce emissions. All local measures would be adopted by the SJVAPCD before 2012. This plan was approved by the EPA on March 1, 2012. On November 26, 2012, however, the EPA withdrew its determination that the plan satisfied the Clean Air Act requirements regarding emission growth caused by growth in vehicle-miles traveled. All other determinations in the EPA's March 1, 2012, rule approving the plan remain unchanged and in effect. The District held a public workshop on May 23, 2014 to present and receive comments on the development of the upcoming plan for the 2008 8-hour ozone standard which is due to EPA in 2015/2016.

2007 PM₁₀ Maintenance Plan

On October 25, 2007, CARB approved the SJVAPCD's 2007 PM₁₀ Maintenance Plan and Request for Redesignation with modifications to the transportation conformity budgets. On September 25, 2008, the EPA redesignated the SJVAB to attainment for the PM₁₀ NAAQS and approved the PM₁₀ maintenance plan.

2008 PM_{2.5} Plan

The SJVAPCD Governing Board adopted the 2008 PM_{2.5} plan on April 30, 2008. This plan is designed to assist the SJVAB in attaining all PM_{2.5} standards, including the 1997 Federal standards, the 2006 Federal standards, and the state standard, as soon as possible. On July 13, 2011, the EPA issued a proposed rule partially approving and disapproving the 2008 PM_{2.5} plan. Subsequently, on November 9, 2011, the EPA issued a final rule approving most of the plan with an effective date of January 9, 2012. However, the EPA disapproved the plan's contingency measures because they would not provide sufficient emission reductions.

SB 656 Particulate Matter Control Measure Implementation Schedule

Senate Bill (SB) 656 was enacted in 2003 and codified as Health and Safety Code Section 39614. SB 656 seeks to reduce exposure to PM₁₀ and PM_{2.5} and to make further progress toward attainment of the NAAQS and CAAQS for PM₁₀ and PM_{2.5}. SB 656 required CARB, in consultation with local air districts, to develop and adopt lists of "the most readily available, feasible, and cost-effective" particulate matter control measures. Subsequently, the air districts were required to adopt implementation schedules for

the relevant control measures in their district. In June 2005, The SJVAPCD adopted its SB 656 Particulate Matter Control Measure Implementation Schedule. The SJVAPCD analysis of the CARB list concluded that all but one of the measures that apply to SJVAPCD sources had been implemented or were in one of the SJVAPCD's attainment plans for adoption within the next 2 years. The remaining measure was related to a future amendment of a rule for gasoline transfer into stationary storage containers, delivery vessels, and bulk plants.

San Joaquin Air Quality Rules and Regulations

The following SJVAPCD rules will be applicable to sources at the Project:

Rule 2010 (Permits Required)

Rule 2010 requires, prior to construction, any newly proposed air-polluting facilities to first obtain an Authority to Construct from the Air Pollution Control Officer. Prior to operation of the new facility, the SJVAPCD also requires that any new facility obtain a Permit to Operate from the Air Pollution Control Officer. Permits to Operate must be posted and maintained on or near the source of the air pollution.

Rule 2201 (New and Modified Stationary Source Review)

Rule 2201 establishes the SJVAPCD's authority to limit emissions at new and modified sources so that there is no net increase in emissions above the ambient air quality standards. Rule 2201 allows the SJVAPCD to use different mechanisms, such as emissions offsets, to ensure that ambient air quality standards are met or maintained. The criteria pollutants regulated under New Source Review are volatile organic compounds (VOC, NO_x, SO_x, PM₁₀, PM_{2.5}, and CO). Under Rule 2201, BACT is required if the emissions of a regulated pollutant would exceed 2 pounds per day. In addition, emission offsets to mitigate an increase in emissions from a new or modified stationary source would be required if the facility's emissions exceed 20,000 pounds per year of NO_x or VOC; 200,000 pounds per year of CO or PM_{2.5} (PM_{2.5} offsets are required only for sources that constitute new major sources or Federal major modifications); 54,750 pounds per year of SO_x; or 29,200 pounds per year of PM₁₀.

Rule 2520 (Federally Mandated Operating Permits)

Rule 2520 serves as the SJVAPCD's mechanism for issuing, renewing, revising, revoking, and terminating operating permits for sources of air contaminants in accordance with the requirements of 40 CFR Part 70 and Title V of the Federal Clean Air Act. This rule defines the sources that require federally mandated operating permits, as well as the content of these permits. Federally mandated operating permits are required for all major sources of air pollutants, as well as other sources listed in Section 2.0 of the rule. Generally, the federally mandated operating permits include emissions limitations and standards for Federal criteria pollutants (VOC, NO_x, CO, SO_x, PM₁₀, PM_{2.5}, and lead), new source performance standards, and recordkeeping and reporting requirements. This rule requires that the SJVAPCD combine all Federal and State applicable standards into one permit for each facility, and that the permit indicate where state standards exceed Federal standards.

Rule 2530 (Federally Enforceable Potential to Emit)

The purpose of Rule 2530 is to restrict a stationary source's potential to emit so that a source may be exempt from the requirements of Rule 2520 (Federally Mandated Operating Permits). This rule applies to any stationary source that is a major source of regulated air pollutants or of hazardous air pollutants, but with limitations would be exempt from Rule 2520. This exemption provides stationary sources in the SJVAPCD with a separate option to comply with air quality restrictions. Rule 2530 also includes recordkeeping and reporting requirements. Rule 2530 allows facilities to be excluded from the Title V program (see Rule 2520) by taking limits or keeping records to demonstrate that their emissions are below the applicable thresholds. This process is also referred to as a "synthetic minor."

Rule 2550 (Federally Mandated Preconstruction Review for Major Sources of Air Toxics)

Rule 2550 provides an administrative mechanism for applying the requirements of 40 CFR §§ 63.40–63.44 at major sources of hazardous air pollutants that have Authority to Construct permits for new construction or reconstruction. Rule 2550 requires that new or reconstructed sources use Toxic Best Available Control Technology (TBACT), with some exceptions.

Rule 4001 (New Source Performance Standards)

Rule 4001 codifies the SJVAPCD's adoption and incorporation of the New Source Performance Standards as set forth in 40 CFR Part 60. New Source Performance Standards apply to a variety of different types of stationary sources, including asphalt plants. The regulation imposes emissions standards for certain pollutants and requires that specified emission control equipment and monitoring devices be installed at all new, modified, or reconstructed facilities to limit emissions. The regulation also includes test methods and procedures, as well as monitoring, notification, and recordkeeping requirements. The asphalt plant and aggregate plant are subject to 40 CFR Part 60, Subparts I and OOO, respectively; those regulations are discussed in previous sections.

Rule 4002 (National Emission Standards for Hazardous Air Pollutants)

Rule 4002 incorporates the National Emission Standards for Hazardous Air Pollutants (NESHAPs) as set forth in 40 CFR Part 61, and the NESHAPs for source categories as set forth in 40 CFR Part 63. 40 CFR Part 61 includes emission standards for several known toxic air pollutants, such as beryllium, mercury, and vinyl chloride. 40 CFR Part 63 regulates NESHAP by source categories. Both regulations also include test methods and procedures, as well as monitoring, notification, and recordkeeping requirements. No current NESHAP would apply to the proposed facility.

Rule 4101 (Visible Emissions)

Rule 4101 prohibits emissions of visible air contaminants from any potential source of air contaminants. The rule prohibits air contaminants, other than water vapor, from resulting in greater than Number 1 on Ringelmann Chart (i.e. 20% opacity) for a combined period of more than 3 minutes of any hour.

Rule 4102 (Nuisance)

To protect the public health, Rule 4102 prohibits any person from discharging such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.

Rule 4201 (Particulate Matter Concentration)

To protect the ambient air quality, Rule 4201 establishes a particulate matter emission standard. A release or discharge of dust, fumes, or total suspended particulate matter emissions into the atmosphere from any single-source operation may not exceed 0.1 gr/dscf. Rule 4201 includes test methodology to determine the particulate concentration in an exhaust stream.

Rule 4202 (Particulate Matter Emission Rate)

Rule 4202 limits particulate matter emissions and applies to any source operation that emits or may emit particulate matter. The rule specifies allowable emissions rates based on process weight rate calculations.

Rule 4307 (Boilers, Steam Generators, and Process Heaters)

Rule 4307 establishes NO_x and CO emissions limitations for boilers, steam generators, and process heaters. This rule applies to any unit that is fired on gaseous fuel or liquid fuel, or is fired on gaseous and liquid fuel sequentially, and for which the total rated heat input is 2.0 to 5.0 million British thermal units per hour (MMBtu/hr) or greater. The burner for the proposed hot oil heater is rated at 2.0 MMBtu/hr. The applicable limits for new units are 9 ppmv NO_x at 3% oxygen and 400 ppmv CO at 3% oxygen. The rule includes monitoring and recordkeeping requirements. Compliance with the emission limits must be determined by periodic source testing.

Rule 4309 (Dryers, Dehydrators, and Ovens)

Rule 4309 establishes NO_x and CO emissions limitations for dryers, dehydrators, and ovens. This rule applies to any unit that is fired on gaseous fuel or liquid fuel, or is fired on gaseous and liquid fuel sequentially, and for which the total rated heat input is 5.0 MMBtu/hr or greater. The burner for the proposed aggregate dryer is 125 MMBtu/hr. The applicable limits for burners at asphalt plants are 4.3 ppmv NO_x at 19% oxygen and 42 ppmv at 19% oxygen. The rule includes monitoring and recordkeeping requirements. Compliance with the emission limits must be determined by periodic source testing or an approved alternate emissions monitoring system.

Rule 4623 (Storage of Organic Liquids)

Rule 4623 limits VOC emissions from the storage of organic liquids. The rule applies to any tank of organic liquid with a capacity of 1,100 gallons or greater, and requires that such tanks include VOC control systems. The rule includes maintenance, recordkeeping, and testing requirements. However, tanks exclusively receiving and/or storing an organic liquid with a true vapor pressure (TVP) less than 0.5 pound per square inch absolute (e.g. diesel fuel, lubricating and hydraulic oils) are exempt from all other

requirements of the rule except for complying with the provisions for (1) TVP and API gravity testing, (2) recordkeeping, and (3) test methods.

Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations)

A NOP comment indicated that the Project may be subject to Rule 4641 which prohibits the manufacture of cutback, slow cure, and emulsified asphalt. The Project's asphalt plant would not manufacture cutback, slow cure, and emulsified asphalt.

Regulation VIII (Fugitive PM₁₀ Prohibitions)

The rules under Regulation VIII are intended to reduce ambient concentrations of particulate matter (PM₁₀ or larger) and have been developed pursuant to EPA guidance for Serious PM₁₀ Nonattainment Areas. These rules are applicable to specified anthropogenic fugitive dust sources. Administrative requirements, such as recordkeeping requirements and test methods, apply.

Rule 8021 (Construction, Demolition Excavation, Extraction, and Other Earthmoving Activities)

Rule 8021 prohibits construction, demolition, excavation, extraction, or other earthmoving activities unless the appropriate requirements are sufficiently implemented to limit visible dust emissions (VDE) to 20% opacity.

Rule 8031 (Bulk Materials)

Rule 8031 requires any facility that performs outdoor handling, storage, and transport of bulk materials to use appropriate methods as listed in Rule 8031 to limit VDE to 20% opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011. Appropriate methods to limit VDE in Rule 8031 include: applying water or chemical/organic stabilizers/suppressants; constructing and maintaining sufficient barriers to obstruct wind; storing materials on stabilized surfaces; covering bulk materials with tarps, plastic, or other suitable material; limiting on-site vehicle speed; loading haul trucks to limit VDE; applying water on the top of loads to limit VDE; covering haul trucks with tarps or other covers to limit VDE; and maintaining haul trucks to prevent spillage or loss of bulk materials.

Rule 8041 (Carryout and Trackout)

The purpose of Rule 8041 is to prevent or limit fugitive dust emissions from carryout and trackout on paved public roads or the paved shoulders of paved public roads. Facilities subject to Rules 8021, 8031, 8061, or 8071 must also comply with this rule. Rule 8041 requires that such facilities sufficiently prevent or clean up carryout and trackout at the end of each workday. Cleanup of carryout and trackout shall be accomplished by manually sweeping and picking up, operating a rotary brush or broom accompanied by sufficient wetting to limit VDE to 20% opacity, operating a PM₁₀-efficient street sweeper that has a pick-up efficiency of at least 80%, or flushing with water if curbs and gutters are not present and where the use of water will not result in a source of trackout material of other adverse impacts, such as a violation of the National Pollutant Discharge Elimination System program. An owner/operator of a construction

project 10 acres or more in size within a rural area shall prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site. Rule 8041 requires that owners/operators of sites with paved interior roads use prevention and mitigation methods to reduce carryout and trackout as specified in Section 5.8 of the Rule. Rule 8041 prohibits the use of blower devices, or dry rotary brushes or brooms, for removal of carryout and trackout on public roads.

Rule 8051(Open Areas)

The purpose of Rule 8051 is to limit fugitive dust emissions from open areas. The rule applies to any open area having 0.5 acre or more within urban areas, or 3.0 acres or more within rural areas, and that contains at least 1,000 square feet of disturbed surface area. Whenever open areas are disturbed or vehicles are used in open areas, an owner/operator must implement one or a combination of control measures to comply with the conditions of a stabilized surface at times and to limit VDE to 20% opacity. Control measures to be used include: applying and maintaining water or dust suppressant(s) to unvegetated areas or establishing vegetation on previously disturbed areas; or paving, applying, and maintaining gravel, or applying and maintaining chemical/organic stabilizers/suppressants. Where open areas are disturbed due to trespass, such activities should be prevented by posting “No Trespassing” signs or installing physical barriers such as fences.

Rule 8061 (Paved and Unpaved Roads)

The purpose of Rule 8061 is to limit fugitive dust emissions from paved and unpaved roads by implementing control measures and design criteria. This rule applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project. Rule 8061 requires that new or modified paved roads have certain specifications based on the road’s existing or projected annual average daily trips (AADT). Requirements include minimum paved or stabilized shoulder widths, as well as curbing, intersection, and median specifications. The rule prescribes requirements for maintenance of public paved roads, including specifications for PM₁₀-efficient sweepers and road cleanup. Rule 8061 also includes requirements for unpaved road segments. Unpaved road segments with 26 or more AADT must stabilize road surfaces by application of water, chemical dust suppressant, washed gravel, or similar measures. In addition, the visible dust emissions associated with such areas is limited to 20% opacity. Unpaved roads with fewer than 26 AADT are exempt from some requirements of this rule.

Rule 8071 (Unpaved Vehicle/Equipment Traffic Areas)

This rule limits fugitive dust emissions from unpaved vehicle and equipment traffic areas. Unpaved vehicle and equipment traffic areas with 50 or more AADT must stabilize road surfaces by application of water, chemical dust suppressant, washed gravel, or similar measures. In addition, the visible dust emissions associated with such areas is limited to 20% opacity. Unpaved vehicle and equipment traffic areas with less than 50 AADT are exempt from Rule 8071.

Rule 9510 (Indirect Source Review)

Rule 9510 is intended to reduce emissions of NO_x and PM₁₀ from new development projects. The rule applies to specified development projects that seek to gain a discretionary approval. However, a development project on a facility whose primary functions are subject to Rule 2201 (New and Modified Stationary Source Review Rule) or Rule 2010 (Permits Required) is exempt from this rule. Aggregate mining or processing is specifically indicated as an example of a development project that would be exempt from Rule 9510.

Fresno County General Plan (2000)

The Fresno County General Plan includes goals and policies directed toward protecting and maintaining air quality within the County. The policy relevant to this analysis is listed below.

Policy OS-G.2

The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.

3.3.4 Significance Thresholds**3.3.4.1 Appendix G Thresholds of Significance**

According to Appendix G of the CEQA guidelines, the Project would have a significant impact to air quality if it would:

- a) *Conflict with or obstruct implementation of an applicable air quality plan;*
- b) *Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*
- c) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);*
- d) *Expose sensitive receptors to substantial pollutant concentrations; or*
- e) *Create objectionable odors affecting a substantial number of people.*

3.3.4.2 Additional Thresholds of Significance

Based on CEQA Guidelines, the SJVAPCD developed thresholds of significance for the San Joaquin Valley to provide additional guidance for determining the level of air quality impacts of a project. Based on SJVAPCD guidelines, the following criteria were also considered in the evaluation of the Project's air quality impacts:

8. Would the Project cause significant construction emissions?

9. Would the Project cause ozone precursor emissions from reactive organic gases (ROG) (essentially equivalent to VOCs) and NO_x during project operations to exceed the values set for ROG (10 tons per year) and NO_x (10 tons per year)?
10. Would the Project cause estimated CO concentrations to exceed the CAAQS of 9 ppm, averaged over 8 hours, and 20 ppm for 1 hour?
11. Would the Project frequently expose members of the public to objectionable odors?
12. Would the Project exceed SJVAPCD's thresholds for toxic air contaminants?:
 - a. Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10-in-a-million; or
 - b. Ground-level concentrations of non-carcinogenic toxic air contaminants would result in an acute or chronic Hazard Index (HI) greater than 1 for the MEI.
13. Would the Project cause the administrator of the Risk Management Program to determine significant potential impacts from accidental releases of acutely hazardous air pollutants?
14. Would the Project cause effects that are considered cumulatively significant (when combined emissions from the project and other existing and planned projects will exceed air quality standards)?

3.3.5 Methodology of Analysis

Guidelines and emissions thresholds established by the SJVAPCD in its Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD, adopted August 1998 and revised January 10, 2002) are used in this analysis. SJVAPCD also requires evaluation of cumulative air quality impacts, which are assessed in Section 3.3.7.

Operations would be typical of sand and gravel extraction, with conventional mining practices common to the industry, and would include an aggregate processing plant, a hot-mix asphalt plant, a ready-mix concrete plant, acceptance and processing of recycled asphalt for use in recycled asphalt pavement, and acceptance and processing of recycled concrete for use in base products.

While initial operation is anticipated in 2015, the facility would operate at substantially lower production rates, operating hours, and traffic levels at that time. Two operating scenarios representing potential operating conditions were evaluated. The first scenario assumes the conditions that would occur in 2015, the first year of production. The second scenario assumes the conditions that would occur in 2019, when the aggregate, asphalt, and concrete processing plants are expected to reach full production levels and haul trucks transporting material to the aggregate plant would be replaced by a conveyor system. The production rates used in this assessment are the peak production rates requested by the Applicant; therefore, they represent the worst-case scenario.

3.3.5.1 Project Design Features and Assumptions

The impact assessment incorporated the following design features and assumptions:

- The aggregate mine and associated aggregate plant, asphalt plant, concrete plant, and recycling facilities would operate in compliance with applicable air quality regulations.
- Authorities to Construct and Permits to Operate would be obtained from the SJVAPCD for the aggregate processing plant, asphalt plant, and concrete plant at which time the equipment would be required to utilize Best Available Control Technology (BACT).
 - i. The aggregate processing plant would be equipped with water sprays at key emissions points.
 - ii. Crushers and screens in the aggregate processing plant would be controlled by baghouses or another technology that the SJVAPCD determines would achieve equivalent effectiveness when BACT is applied during New Source Review (NSR).
 - iii. The HMA plant would be equipped with a baghouse for the aggregate dryer/batch tower and a fiberbed filter (or equivalent) for the storage silos and truck loadout. Odorous emissions (primarily VOCs and semi-volatile organic compounds (SVOCs)) from asphaltic cement would be minimized by circulation of mixing drum vapors to the dryer burner before discharge, and the fiberbed filters.
 - iv. The RMC plant would be equipped with baghouses to control fugitive emissions from silos and truck loadout and will utilize water sprays at sand and gravel transfer points as necessary.
- Diesel engines would comply with applicable state regulations (i.e. air toxic control measures, ATCMs). This includes labeling of off-road equipment with registration numbers assigned by CARB, establishment of an idling policy, and limiting idle time to less than five minutes (13 CCR §2449).
- A fugitive emission control plan would be implemented to comply with SJVAPCD Regulation VIII, “Fugitive PM10 Prohibition” and would include the following measures:
 - i. Prior to removal of topsoil and overburden, the area will be irrigated or sprayed by water trucks if removal occurs during the dry season.
 - ii. A water truck will be utilized to wet down the haul road from the mining area to the plant site as necessary to meet SJVAPCD fugitive dust requirements.
 - iii. A water truck will be utilized to wash fugitive dust from the access road and the paved portion of the plant road.
 - iv. Records demonstrating compliance with fugitive dust requirements will be maintained for those days that a control measure was implemented and include the type of control measure(s) used, the location and extent of coverage, the date, the amount, and frequency of dust suppressant applied (Section 6.2, Rule 8011).

- v. Visible dust emissions will be limited to 20% opacity for a period or periods aggregating more than three (3) minutes in any one (1) hour and comply with the conditions for stabilized surface areas (Section 5.0, Rule 8021; Section 5.0, Rule 8031).
- vi. Disturbed areas that are greater than 0.5 acres in size and which remain inactive for seven (7) days will be stabilized (Section 5.2, Rule 8021).
- vii. Stockpile surfaces will be stabilized (Section 5.0, Rule 8031).
- viii. A stabilized surface will be maintained on the unpaved mine haul road (Section 5.2, Rule 8021).
- ix. During high wind conditions, excavation and other earthmoving activities that disturb the soil will cease whenever visible dust emissions exceed 20% opacity. Continue operation of water trucks/control devices when activities cease, unless unsafe to do so. (Section 5.4, Rule 8021).
- x. Visible mud or dirt deposited onto public adjacent paved roads will be prevented or cleaned up at the end of the work day (Section 5.1, Rule 8041).
- xi. Facilities and signs will be provided directing drivers to level with six inches of freeboard, wet, and/or cover loads (Section 5.0, Rule 8031).
- xii. Materials accumulated on paved interior roads shall be removed with sufficient frequency, but not less frequently than once per workday, to prevent carryout and trackout onto paved public roads (Section 5.9.3, Rule 8041).
- xiii. Unauthorized vehicle disturbance of open areas will be prevented by posting signs or installing physical barriers such as fences, gates, posts, and/or other appropriate barriers to effectively prevent access to the area(s) (Section 5.0, Rule 8051).
- xiv. Unpaved vehicle and/or equipment parking areas, fueling and services areas, and stockpile areas will be maintained in a stabilized condition (Section 5.0, Rule 8071).
- The Project is located in Fresno County, which is among the counties listed as containing serpentine and ultramafic rock (OPR, 2000). However, no serpentine or ultramafic rock has been found on the Project site or in the vicinity of the Project. In addition, the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (17 CCR §93105) exempts materials produced by facilities that mine alluvial deposits, as would be the case for the Project. Therefore, asbestos was excluded from the health risk assessment performed for the Project.
- The Project would not store hazardous substances or acutely hazardous substances in quantities that would be subject to chemical accident prevention provisions of the Clean Air Act or the implementing regulation (40 CFR Part 68).
- Excavated aggregate would contain approximately 10% natural moisture from having been excavated below the groundwater level.

- Dust palliatives, such as lignin sulfonate or magnesium chloride, would be applied to unpaved plant roads and surfaces.
- The Plant access road and a portion of the Plant road in the vicinity of the asphalt and concrete plants would be paved.
- A wheel washer would be installed after the scales to prevent trackout to the public highway.
- Mined aggregate would be initially transported to the processing plant by off-road haul trucks for approximately one year. Subsequently, mined aggregate would be transported to the plant by electric-powered conveyors.
- An electric-powered dragline would be used after overburden is removed from each mining phase. This eliminates diesel engine emissions that would otherwise occur from a diesel dragline or other diesel excavation equipment and enables “wet mining” methods which reduce fugitive dust.

3.3.5.2 Operating Scenarios

The following cities and distances were considered in choosing the Project trip length of 25 miles for aggregates and related materials: Clovis 23 miles; Fresno 23 miles; Kingsburg 13 miles; Fowler 13 miles; Parlier 10 miles; Reedley 10 miles; Orange Cove 14 miles; Sanger 3.5 miles; and Selma 13 miles. The following one-way vehicle trip lengths were used for both the 2015 and 2019 analyses:

- Aggregate Trucks – 25 miles based on the average distance to potential customers in cities near the proposed facility.
- Asphalt Trucks – 25 miles based on the average distance to potential customers in cities near the proposed facility.
- Concrete Trucks – 25 miles based on the average distance to potential customers in cities near the proposed facility.
- Liquid asphalt Trucks – 140 miles based on the distance to a Bakersfield refinery.
- Cement Trucks – 145 miles based on the distance to a cement plant in Tehachapi or Calaveras.
- Imported Recycle Trucks (Asphalt and Concrete) – 25 miles based on the average distance to potential customers in cities near the proposed facility.
- Propane Trucks – 17 miles based on the distance to a local propane supplier.
- Diesel Trucks – 15 miles based on the distance to a local diesel fuel supplier.
- Employee Vehicles – 14.7 miles based on the rural commercial commute trip distance in the SJVAB as used by the California Emissions Estimator Model (CalEEMod).

- Outside Services and Miscellaneous Visitor Vehicles – 6.6 miles based on the rural commercial non-work trip distance in the SJVAB as used by CalEEMod. This distance is the assumed distance for the additional trips to the project site by parcel delivery trucks from their route.

2015 Scenario

In 2015, the aggregate plant is projected to produce 196,250 tons per year for off-site sales to customers, 71,250 tons per year of sand and aggregate as ingredients in the asphalt product, 82,500 tons per year of sand and aggregate as ingredients in the concrete product, for an overall production rate of 350,000 tons per year. With additional waste estimated at 22%, which would be unsuitable for aggregate sales or asphalt and concrete products, the annual processing rate would be 448,000 tons per year. The aggregate plant would process a nominal 648 tons per hour. The aggregate plant is assumed to operate up to 8 hours per day, 5 days per week, 250 days per year.

Table 3.3-5 Mine Equipment Operating Hours and Vehicle-Miles Traveled (2015)

Equipment	Model	Hours/Day	Hours/Year	VMТ/Day	VMТ/Year
Scrapers ^a	Caterpillar 657	8.0	182	NA	NA
Bulldozer ^b	Caterpillar D9T	5.8	1,500	NA	NA
Front-End Loader ^b	988H	8.5	2,340	NA	NA
Haul Trucks (2 units)	Caterpillar 770	8	2,080	15.8	4,097
Motor Grader	Caterpillar 14M	3	780	0.2	59.1
Water Truck (off-road)	—	6	1,560	1.3	325

Source: Dudek, 2013a.

^a Scrapers would only be used for removal of overburden prior to mining in a new location and not for the actual mining. Overburden removal is anticipated to occur every 3 to 5 years.

^b The Caterpillar D9T bulldozer and 988H front-end loader would operate in the pit, which would be very wet (close to groundwater level); therefore, it is assumed that this activity in the pit would not generate fugitive dust emissions.

NA – Emissions for this equipment are based on operating hours.

Emissions from the asphalt processing operations are estimated at production levels of 500 tons per hour and 75,000 tons per year in 2015. The asphalt plant is assumed to operate up to 8 hours per day, 5 days per week, 250 days per year.

Emissions from the concrete processing operations are estimated at production levels of 180 cubic yards per hour and 50,000 cubic yards per year in 2015. The concrete plant is assumed to operate up to 8 hours per day, 5½ days per week, 275 days per year.

The portable recycle plant would process a maximum of 15,000 tons of recycled asphalt per year in 2015. In addition, up to 60,000 tons of recycled concrete per year would be processed in 2015 for road base and similar uses. At an expected processing rate of 250 tons per hour, the portable plant would operate up to 8 hours per day, 333 hours per year, based on a processing efficiency of 90% efficiency.

Emission sources at the general plant site consist of off-road vehicles (e.g., front-end loader, manlift, crane), various support trucks, raw material and product trucks that carry materials from suppliers and to customers, recycled asphalt and concrete trucks, employee vehicles, and outside services and miscellaneous visitor vehicles. The anticipated equipment and vehicles and operating hours and daily VMT for both 2015 and 2019 are shown in Table 3.3-6.

Table 3.3-6 General Plant Equipment and Service Trucks (2015 and 2019)

Equipment	Model	Hours/Day	Hours/Year	VMT/Day	VMT/Year
Mobile Equipment					
Front-End Loaders (2)	Caterpillar 980H	9	2,080	0.5	130
Manlift	JLT 600S	2	520	Emissions from this equipment are based on operating hours	
Crane	Grove RT600E	2	520		
Skid Steer	Caterpillar 262C	4	1,040		
Fork Lift	ND	4	520		
Support Trucks					
Lube Truck	ND	Emissions for on-road trucks are based on VMT		2.0	520.0
Service Truck	ND			2.0	520.0
Pickup Trucks (2)	ND			2.0	520.0
Dump Truck	ND			2.0	520.0

Source: Dudek, 2013a.

ND – Model not determined at this time.

NA – Emissions from this equipment are based on operating hours and not VMT.

The on-road trucks and other vehicles operating on the plant site and their daily and annual one-way trips and VMT in 2015 are shown in Table 3.3-7. Daily and annual VMT assumes the vehicles would travel 2,800 feet (0.53 mile) each way on the access road and 1,500 feet (0.28 mile) round-trip around the plant site road.

The plant road would be primarily unpaved, but treated with a dust palliative and watered as necessary to minimize fugitive dust. A portion of the plant road in the vicinity of the asphalt and concrete plants would be paved to facilitate cleanup of spilled materials. It is estimated that the paved portion would be 500 feet (0.09 mile), and 1,000 feet (0.19 mile) would be unpaved. In addition, it is assumed that support trucks may travel on other unpaved surfaces to perform repair and maintenance operations. Their travel distance on unpaved roads and surfaces is assumed to be included in their daily travel distance of 2.0 miles. To be conservative, all support trucks were assumed to travel only on unpaved roads and surfaces. All other vehicles were assumed to travel around the entire plant road (in and out) after they arrive at the plant site via the access road. Thus, the number of one-way trips to and from the project site was divided by 2 to reflect the entire trip around the Plant site.

Table 3.3-7 On-Site Material Transport Truck Travel (2015)

Vehicle Type	Maximum One-Way Trips/Day	One-Way Trips/Year	Maximum VMT/Day	VMT/Year
<i>Aggregate Plant</i>				
Aggregate Product Trucks	266	15,700	179	10,556
<i>Asphalt Plant</i>				
Liquid Asphalt Trucks	10	278	7	187
Asphalt Product Trucks	212	6,000	143	4,034
<i>Concrete Plant</i>				
Cement Trucks	22	870	15	585
Concrete Product Trucks	224	12,500	151	8,404
Import Concrete/Asphalt for Recycle	40	6,000	27	4,034
<i>Fuel Trucks</i>				
Propane Trucks	2	34	1	23
Diesel Trucks	2	9	1	6
<i>Other Vehicles</i>				
Employee Vehicles	56	14,500	38	9,749
Outside Services and Miscellaneous Visitor Vehicles	6	125	4	84

Source: Dudek, 2013a

In addition to travel by haul trucks on the haul road between the mining site and Plant site in 2015, these trucks would travel partially on the Plant site to the aggregate plant. It is assumed that they would travel approximately 1,000 feet (0.19 mile) on the Plant site to arrive at the aggregate plant. The on-road trucks and other vehicles operating on external roads, their trip distance, daily and annual one-way trips, and VMT in 2015 are shown in Table 3.3-8.

Table 3.3-8 Off-Site Material Transport Activity (2015)

Vehicle Type	Trip Distance Miles	Maximum One-Way Trips/Day	One-Way Trips/Year	Maximum VMT/Day	VMT/Year
<i>Aggregate Plant</i>					
Aggregate Product Trucks	25	266	15,700	6,650	392,500
<i>Asphalt Plant</i>					
Liquid Asphalt Trucks	140	10	278	1,400	38,889
Asphalt Product Trucks	25	212	6,000	5,300	150,000
<i>Concrete Plant</i>					
Cement Trucks	145	22	870	3,190	126,204
Concrete Product Trucks	25	224	12,500	5,600	312,500
Import Concrete/Asphalt for Recycle	25	40	6,000	1,000	150,000
<i>Fuel Trucks</i>					
Propane Trucks	17	2	34	34	576
Diesel Trucks	15	2	9	30	129
<i>Other Vehicles</i>					
Employee Vehicles	14.7	56	14,500	823	213,150
Outside Services and Miscellaneous Visitor Vehicles	6.6	6	125	40	825

Source: Dudek, 2013a

a All trips are one-way trips either from an off-site location to the facility entrance, or the return trip.

2019 Scenario

For the 2019 scenario, the equipment, except the scrappers, was assumed to be 5 years old at the end of the year. The scrapers are assumed to be equipped with Tier 3 engines and be up to 10 years old (i.e., 2010 model year). In addition, haul trucks would not be used in this scenario because transfers from the mine to the aggregate plant would be performed using conveyors. The resultant daily and combustion emissions from off-road equipment operating in the mine for the 2019 scenario are shown in Table 3.3-9.

In 2019, the aggregate plant is projected to produce 765,000 tons per year for off-site sales to customers, 237,500 tons per year of sand and aggregate as ingredients in the asphalt product, 247,500 tons per year of sand and aggregate as ingredients in the concrete product for an overall production rate of 1,250,000 tons per year. With additional waste estimated at 22%, which would be unsuitable for aggregate sales or asphalt and concrete products, the annual processing rate would be 1,600,000 tons per year. The aggregate plant would process a nominal 648 tons per hour. The aggregate plant is assumed to operate up to 8 hours per day, 5 days per week, 250 days per year.

Table 3.3-9 Mine Equipment Operating Hours and Vehicle-Miles Traveled (2019)

Equipment	Model	Hours/Day	Hours/Year	VMT/Day	VMT/Year
Scrapers ^a	Caterpillar 657	8.0	182	NA	NA
Bulldozer ^b	Caterpillar D9T	5.8	1,500	NA	NA
Front-End Loader ^b	988H	8.5	2,340	NA	NA
Motor Grader	Caterpillar 14M	3	150	0.2	11.4
Water Truck (off-road)	—	6	1,560	1.3	325

Source: Dudek, 2013a

^a Scrapers would only be used for removal of overburden prior to mining in a new location and not for the actual mining. Overburden removal is anticipated to occur every 3 to 5 years.

^b The Caterpillar D9T bulldozer and 988H front-end loader would operate in the pit, which would be very wet (close to groundwater level); therefore, it is assumed that this activity in the pit would not generate fugitive dust emissions.

NA – Emissions for this equipment are based on operating hours.

The on-road trucks and other vehicles operating on the Plant site and their daily and annual one-way trips and VMT in 2019 are shown in Table 3.3-11. Daily and annual VMT assumes the vehicles would travel 2,800 feet (0.53 mile) each way on the access road and 1,500 feet (0.28 mile) round-trip around the plant site road.

For the 2019 scenario, the emissions from the asphalt processing operations are based on production levels of 500 tons per hour and 250,000 tons per year. The asphalt plant is assumed to operate up to 8 hours per day, 5 days per week, 250 days per year.

The maximum amount of recycled asphalt to be processed in 2019 would be 25,000 tons per year. In addition, up to 100,000 tons of recycled concrete per year would be processed in 2019. At an expected processing rate of 250 tons per hour, the portable plant would operate up to 8 hours per day, 556 hours per year, based on a processing efficiency of 90% efficiency. It is assumed that recycled concrete and asphalt would be brought to the proposed facility up to 250 days per year.

Emission sources at the general Plant site consist of off-road vehicles (e.g., front-end loader, manlift, crane), various support trucks, raw material and product trucks that carry materials from suppliers and to customers, recycled asphalt and concrete trucks, employee vehicles, and outside services and miscellaneous visitor vehicles. The anticipated equipment and vehicles and operating hours and daily VMT for both 2015 and 2019 are shown in Table 3.3-6.

For the 2019 scenario, the emissions from the concrete processing operations are based on production levels of 180 cubic yards per hour and 150,000 cubic yards per year. The concrete plant is assumed to operate up to 8 hours per day, 5½ days per week, 275 days per year.

Table 3.3-10 On-Site Material Transport Truck Travel (2019)

Vehicle Type	Maximum One-Way Trips/Day	One-Way Trips/Year	Maximum VMT/Day	VMT/Year
<i>Aggregate Plant</i>				
Aggregate Product Trucks	266	61,200	179	41,148
<i>Asphalt Plant</i>				
Liquid Asphalt Trucks	10	926	7	623
Asphalt Product Trucks	212	20,000	143	13,447
<i>Concrete Plant</i>				
Cement Trucks	22	2,611	15	1,756
Concrete Product Trucks	224	37,500	151	25,213
Import Concrete/Asphalt for Recycle	40	10,000	27	6,723
<i>Fuel Trucks</i>				
Propane Trucks	2	107	1	72
Diesel Trucks	2	25	1	17
<i>Other Vehicles</i>				
Employee Vehicles	76	20,000	51	13,447
Outside Services and Miscellaneous Visitor Vehicles	14	325	9	219

Source: Dudek, 2013a

The on-road trucks and other vehicles operating on off-site roads, their trip distance, daily and annual one-way trips, and VMT in 2019 are shown in Table 3.3-11.

Table 3.3-11 Off-Site Material Transport Activity (2019)

Vehicle Type	Trip Distance Miles	Maximum One-Way Trips/Day	One-Way Trips/Year	Maximum VMT/Day	VMT/Year
<i>Aggregate Plant</i>					
Aggregate Product Trucks	25	266	61,200	6,650	1,530,000
<i>Asphalt Plant</i>					
Liquid Asphalt Trucks	140	10	926	1,400	129,630
Asphalt Product Trucks	25	212	20,000	5,300	500,000
<i>Concrete Plant</i>					
Cement Trucks	145	22	2,611	3,190	378,611
Concrete Product Trucks	25	224	37,500	5,600	937,500

Vehicle Type	Trip Distance Miles	Maximum One-Way Trips/Day	One-Way Trips/Year	Maximum VMT/Day	VMT/Year
Import Concrete/Asphalt for Recycle	25	40	10,000	1,000	250,000
<i>Fuel Trucks</i>					
Propane Trucks	17	2	107	34	1,817
Diesel Trucks	15	2	25	30	375
<i>Other Vehicles</i>					
Employee Vehicles	14.7	76	20,000	1,117	294,000
Outside Services and Miscellaneous Visitor Vehicles	6.6	14	325	92	2,145

Source: Dudek, 2013a

^a All trips are one-way trips either from an off-site location to the facility entrance, or the return trip.

3.3.5.3 Emissions Calculations

Mining

Combustion emission sources at the mine consist of off-road mobile equipment (e.g., front-end loaders, bulldozer), off-road haul trucks (2015 scenario only) that carry aggregate from the mine to the aggregate processing area, and a water truck that applies water to disturbed areas. The off-road equipment emissions were calculated using the CARB OFFROAD2007 and OFFROAD2011 emissions inventory models¹. It was assumed that the off-road equipment would be primarily purchased new (Model Year 2015), except for the scrapers and haul trucks. Two scrapers would be operated by contractors for 4 weeks per year to remove overburden as a new mining area is opened, normally every 3 to 5 years. The scrapers are assumed to be equipped with Tier 3 engines and be up to 10 years old (i.e., 2006 model year). The haul trucks would be rented for several years, but they would be equipped with Tier 4 engines; thus, they are assumed to be Model Year 2014. Horsepower ratings for the off-road equipment were provided by Riverbend's representatives or Caterpillar specifications.

For the 2019 scenario, the equipment, except the scrapers, was assumed to be 5 years old at the end of the year. The scrapers are assumed to be equipped with Tier 3 engines and be up to 10 years old (i.e., 2010 model year). In addition, haul trucks would not be used in this scenario because transfers from the mine to the aggregate plant would be performed using conveyors.

¹ The updated regulatory version of OFFROAD2007 (also known as OFFROAD2011) applies a factor of 0.67 to the OFFROAD2007 load factors because CARB found that the previous load factors were overestimated by 33%. OFFROAD2011 includes only NOx, PM, and ROG emissions. Other pollutants are from OFFROAD2007.

Overburden Removal and Travel on Unpaved Surfaces

The emission factors for fugitive dust generated during periodic removal of overburden using scrapers were determined using calculations in Section 11.9, “Western Coal Surface Mining,” of the EPA’s Compilation of Air Pollutant Emission Factors (AP-42) (EPA, 1998). Mean vehicle speed was assumed to be default of 7.1 mph. The travel distance is based on the assumption that each scraper would remove overburden from 1 acre per day (CAPCOA, 2011). The control efficiency for watering disturbed areas three to four times per day was assumed to be 61% based on the control efficiency found in the CalEEMod User’s Guide (CAPCOA, 2011). The silt content of the unpaved surfaces was assumed to be 8.3% (EPA, 2006). The unloaded vehicle weight and capacity (for loaded weight) were obtained from the manufacturers’ specification sheets. The emissions were adjusted for rainfall, assuming 45 days exceeding 0.01 inch of rainfall (NCDC, 2008).

The emissions for the 2019 scenario assume the same travel distances for the mine mobile equipment as those for the 2015 scenario. As noted above, the haul trucks would not be used in 2019; however, the grader and water truck would still be used to maintain the haul road for travel by other vehicles (e.g., support trucks) that would need occasional access to the mining area.

Aggregate Processing

Material delivered to the aggregate processing area would be placed in a loading bin for the stacker conveyor (when haul trucks are used), or placed directly onto the stacker conveyor (when conveyors are used), that would drop the material onto a single storage pile. Fugitive dust emissions are associated with both the placement of material into the conveyor loading bin (where applicable) and the dropping of material onto the storage pile.

From the storage pile, material would be placed onto conveyors transporting it to primary and secondary crushers, sizing screens, and additional conveyors. Based on the sizing screens, different sized material would be directed to different aggregate product storage piles. Fugitive dust emissions would occur from the processing of material through crushers and screens, and from the dropping of sized material onto product storage piles.

Aggregate from product storage piles would be transferred by front-end loader to either: 1) a load-out facility for aggregate truck loading; 2) a receiving bin for the asphalt plant; or 3) a receiving bin for the ready-mix plant. Fugitive dust emissions would be associated with the placement of aggregate product in the applicable loading/receiving bin and dropping of material into the truck, asphalt plant, or ready-mix plant.

Aggregate processing requires off-road equipment powered by diesel engines and would emit air pollutants in both combustion exhaust and fugitive dust from movement over unpaved and paved surfaces. Table 3.3-6 shows equipment horsepower anticipated for off-road mobile equipment used in aggregate processing activities.

Aggregate processing equipment (e.g., crushers, fine and coarse screens, conveyors) emits PM₁₀ and PM_{2.5}. The PM₁₀ and PM_{2.5} emissions from the processing equipment were calculated using factors provided in Section 11.9.2 of AP-42. Emission factors for controlled sources were used because processing equipment would have water spray bars installed to reduce the particulate emissions.

For transfers to stockpiles, the “drop” equation in Section 13.2.4 (Aggregate Handling and Storage Piles) of AP-42 (EPA, 2006) was used to derive an emission factor. The mean wind speed (6.46 miles per hour) from the Fresno meteorological dataset for 2007–2011 was used in this calculation. Material moisture content of 1% or 3% was used depending on the source of the transfer emissions.

Asphalt Plant

Emission sources at the proposed asphalt plant consist of process equipment, storage tanks, and silos. The process and storage equipment that emits pollutants includes the liquid asphalt storage tanks, a propane- or natural gas-fired hot oil heater, a propane- or natural gas-fired aggregate dryer and batch tower, the asphalt storage silos, and the truck load-out station. The emissions from the aggregate dryer and batch tower would be controlled by a baghouse. The emissions from the asphalt storage silos would be controlled by venting them to a fiberbed filter (or equivalent). The load-out emissions would also be controlled by the fiberbed filter (or equivalent). Vent condensers are proposed for the liquid asphalt storage tanks for emission control.

The NO_x and CO emissions generated by the dryer’s burner are based on compliance with Rule 4309 and a heat input rating of 125 MMBtu/hr. The SO_x emissions are based on the heat input rating and the sulfur content of propane.

The ROG, PM₁₀, and PM_{2.5} emissions from the aggregate dryer and batch tower were estimated using emission factors from Section 11.1 (Hot Mix Asphalt Plants) of AP-42 for a similarly equipped dryer controlled by a fabric filter (EPA, 2004). The ROG, PM₁₀, and PM_{2.5} emissions are directly proportional to asphalt throughput.

The asphalt plant would involve material transfer and handling processes, which would be sources of PM₁₀ and PM_{2.5} emissions. These material transfer and handling processes include aggregate and sand delivery to storage bins and aggregate and sand transfer by conveyor. The PM₁₀ emissions from this processing equipment were calculated using emission factors from AP-42 Sections 11.19.2 (Crushed Stone Processing and Pulverized Mineral Processing, (EPA, 2004) and 11.12 (Concrete Batching, (EPA, 2006). Asphalt mix was assumed to be 5% asphalt oil and 95% sand/aggregate, with sand comprising 50% and aggregate comprising 50%.

The ROG emissions from the liquid asphalt storage tanks were estimated using the EPA’s TANKS model (EPA, 2005) with the chemical and physical characteristics recommended in Section 11.1 of AP-42 for liquid asphalt (EPA, 2004). The TANKS model was run to estimate the annual emissions from one 30,000-gallon storage tank operating with one-third (the facility would have three tanks) the annual liquid

asphalt throughput required to produce 75,000 tons of asphalt per year in 2015. The modeled ROG values were then multiplied by three.

The NO_x emissions generated by the propane-fired hot oil heater are based on compliance with Rule 4307. The ROG, CO, SO_x, PM₁₀, and PM_{2.5} emissions generated by the hot oil heater were estimated using emission factors from Section 1.5 (Liquefied Petroleum Gas Combustion) of AP-42 (EPA, 2008). The heat input rating of the hot oil heater is 2.0 MMBtu/hr, and it was assumed to operate at its full rating for 24 hours per day, 365 days per year.

The uncontrolled emission factors for asphalt storage silos and truck load-out facilities were developed using the approaches in Section 11.1 of AP-42 (EPA, 2004). These approaches estimate the emissions of total particulate matter and CO. Using these emission factors, the emissions for these pollutants were calculated based on maximum operating parameters on an hourly and yearly basis (i.e., assuming maximum production rate of 500 tons/hour and 75,000 tons/year in 2015). The silos would be connected to a fiberbed filter, which would serve as the emission control device, primarily for VOCs and particulate matter (smoke). The capture efficiency is assumed to be 100% because the silo emissions would be ducted directly to the filter. According to one manufacturer of these devices, the filter would capture 95% of the particulate matter from the silos (Sutton Choate, pers. comm. 2008). The emissions from the load out would be captured by a partial enclosure and vented to a fiberbed filter or similar device. Because the capture of these emissions would not be complete, the capture efficiency is assumed to be 80%. The control efficiency for particulate matter is assumed to be 95% of the particulate matter.

Ready-Mix Plant

The concrete plant would involve material transfer and handling processes that would be the sources of fugitive PM₁₀ and PM_{2.5} emissions. These material transfer and handling processes include aggregate and sand delivery to ground sources, aggregate and sand transfer to conveyors, and aggregate and sand transfer to elevated storage. All these processes were assumed to be uncontrolled. Emissions from transfer of cement and cement supplement (e.g., fly ash) to storage silos and the cement/cement supplement weigh hopper would be controlled by baghouses; thus, controlled PM₁₀ and PM_{2.5} emission factors were used for these sources. The PM₁₀ and PM_{2.5} emissions from the processing equipment were calculated using Section 11.12 (Concrete Batching) of AP 42 (EPA, 2006).

The PM₁₀ and PM_{2.5} emissions from truck loading were estimated using Equations 11.12-1 and 11.12-2 in Section 11.12 of AP-42 to derive the emission factors

Recycling

An electric-powered portable crushing and screening plant would be brought to the site to process accumulated recycled concrete and asphalt. The portable plant would be a source of PM₁₀ and PM_{2.5}.

The portbale plant will be located within the Plant site area. The processed concrete would be sold for road base and similar uses, while the processed asphalt would be fed to the asphalt plant to make recycled asphalt pavement. The portable crushing plant would consist of a portable crushing plant, a portable screening plant, conveyors, a radial stacker (conveyor to the storage piles), and storage piles of the processed material. The emissions from the crusher and screens would be controlled by water sprays; the conveyors would transfer wetted materials between process equipment and the storage piles.

Emissions from processing were calculated using emission factors from Section 11.19.2 of AP-42 (EPA, 2004) as described above for aggregate processing.

General Plant Site

Activities attributed to the general Plant site include travel by transport and other vehicles and operation of off-road vehicles and related fueling stations that support the aggregates, asphalt, and ready-mix plants.

Off-road Vehicles

The emissions from off-road vehicles operating within the General Plant Site were calculated using the methods described above for mine operations. For the 2015 scenario, the mobile equipment was assumed to be new at commencement of operations and 1 year old at the end of the year. For the 2019 scenario, the mobile equipment was assumed to be 5 years old at the end of the year. The emission factors were calculated using these assumptions.

On-road Vehicles

The emission factors for the various support trucks (service truck, lube truck, pickup trucks, dump truck), raw material trucks (liquid asphalt, cement), fuel trucks (propane and diesel), recycled asphalt and concrete trucks, product trucks (aggregate, asphalt, concrete), employee vehicles, and outside services and miscellaneous visitor vehicles were determined from CARB's motor vehicle emission inventory program, EMFAC2011. These vehicles would consist of diesel-fueled Medium-Heavy Duty Trucks (MHDTs), Heavy-Heavy Duty Trucks (HHDTs), and light-duty automobiles (LDA) and trucks (LDT1 and LDT2).

Emission factors for support trucks were obtained using the online version of EMFAC2011 as was done for the 2015 scenario assuming they would be new vehicles in 2015. For the 2019 scenario, an analysis year of 2019 was selected for 2015 model year vehicles (i.e., the support trucks would be 5 years old).

The emissions for non-Riverbend HHDTs, employee vehicles, and outside services and miscellaneous visitor vehicles were calculated using emission factors generated using EMFAC2011 as described below for the 2015 scenario. For the 2019 scenario, the same method as for the 2015 scenario was used except the emission factors were calculated using a 2019 analysis year and the number of trips would reflect the higher production rates in 2019.

Running Emissions

For on-site traveling emissions, the online version of EMFAC2011 was used to obtain the vehicle emission factors in units of grams per mile. As with the off-road equipment, the on-site support trucks would be owned by Riverbend and were assumed to be new (Model Year 2015) at the commencement of operation. Riverbend would not own the trucks transporting raw materials, fuels, recycled asphalt and concrete, or products; they would be provided by the suppliers (raw materials and fuels) or by contractors (recycled asphalt and concrete, products). Because their age is unknown, the full range of vehicle model years in the Fresno County fleet was used for on site vehicle emission factors; calendar year 2015 and a vehicle speed of 20 miles per hour were selected. This vehicle speed was assumed to be the speed at which vehicles would travel in and around the general plant site based on information from Riverbend.

Idling Emissions

For trucks delivering materials or transporting products, a separate calculation was made to estimate the idling emission rate (grams per hour) using EMFAC2011. An ATCM prohibits idling of commercial trucks for more than 5 minutes. Trucks would idle briefly while checking in or out of the facility and during the unloading or loading cycle. To provide a conservative emission estimate, and to be consistent with the maximum idling time allowed under the ATCM, these trucks were assumed to idle 5 minutes per trip to the facility. Although the ATCM contains an exception that allows trucks to idle while involved in operational activities or queuing, truck idling for more than 5 minutes would be infrequent and not representative of normal facility operations. The on-site dump truck was assumed to idle for 15 minutes per day because its engine is also used during dumping, which is allowed by the ATCM.

Diesel Fuel Storage

Emissions resulting from storage of diesel fuel for on-site equipment and trucks were estimated using the EPA's TANKS model, Version 4.0D (EPA, 2005). Total organic compound (TOC) emissions from a diesel storage tank were estimated using the chemical and physical characteristics for No. 2 diesel fuel and the estimated turnovers for the storage tank (e.g., based on the estimated diesel fuel throughput of 30,000 gallons per year in 2015 and 100,000 gallons per year in 2019). The TOC emissions were assumed to be equivalent to ROG emissions. Diesel fuel dispensing into equipment and trucks would generate a negligible amount of ROG emissions due to its very low volatility; thus, these emissions were not quantified.

Internal Unpaved Roads

The PM₁₀ and PM_{2.5} emissions of fugitive dust from travel on the unpaved portion of the plant road and other unpaved surfaces were calculated using the emission factor equation for unpaved roads from Section 13.2.2 of AP-42. The average weight of all vehicles traveling on an unpaved road is used to calculate the emission factor, rather than a separate factor for each vehicle type or class. Because off-road equipment (i.e. loaders, water truck, haul trucks) would travel short distances and to different locations on the plant site than other vehicles, separate emission factors were derived based on the

average weight (average of loaded and unloaded weight) for each equipment unit. This approach would tend to overstate the emission factors because the vehicle-specific weight rather than the average weight of all vehicles is used in the equation, which results in a more conservative emission estimate. For all on-road trucks and automobiles, the weighted-average weight was based on the average weight of the vehicle (e.g., loaded and unloaded for raw material and product trucks) and the distance traveled by each vehicle type, where the majority of the vehicles would travel the length of the unpaved portion of the plant road. This method was used to simulate the average weight of all vehicles traveling on the plant road.

The same emission calculation method as that for the mine was used for fugitive dust generated by vehicles traveling on unpaved road surfaces at the plant site; however, the silt content of the unpaved surfaces was assumed to be 10% (EPA, 2006). Unpaved plant roads and surfaces would be treated with a dust palliative. The control efficiency for application of a dust suppressant to disturbed areas was assumed to be 84% based on the control efficiency used in CalEEMod. The annual emissions were adjusted for rainfall, assuming 45 days exceeding 0.01 inch of rainfall (NCDC, 2008).

Internal Paved Roads

The emission factors for fugitive dust from motor vehicles traveling on paved roads within the general plant site (access road and 500 feet of plant road) were determined using calculations in updated Section 13.2.1 (Paved Roads) of AP-42 (EPA, 2011).

A water truck would be used to wash fugitive dust from the access road and the paved portion of the plant road. Because this measure would minimize the accumulation of fugitive dust on the paved roads, the emission factor for paved plant roads was calculated using the silt loading for local rural roads within the SJVAB (CARB, 2006) rather than that for an “industrial road” listed in Section 13.2.1 of AP-42. The emissions were adjusted for rainfall, assuming 45 days exceeding 0.01 inch of rainfall (NCDC, 2008).

In the emission factor equation for paved roads from Section 13.2.1 of AP-42, the average weight of all vehicles traveling on a paved road is used to calculate the emission factor, rather than a separate factor for each vehicle type or class. For all on-road trucks and automobiles, the weighted-average weight was based on the average weight of the vehicle (e.g., loaded and unloaded for raw material and product trucks) and the distance traveled on the access road and a 500-foot portion of the plant road. This method was used to simulate the average weight of all vehicles traveling on the access road and plant road.

Unlike the previous methods in Section 13.2.1 of AP-42 prior to the January 2011 version, the updated emission calculation does not include brake and tire wear. Emissions from brake and tire wear were estimated using the same method as that for exhaust emissions; that is, the emission factors were obtained from the online version of EMFAC2011 multiplied by the travel distances. The brake and tire wear emissions were included in the estimated emissions of paved road fugitive dust.

The trips were divided by 2 for the 500-foot paved portion because only one pass is made as a vehicle travels around the plant site. Conversely, all trips made on the access road were assumed to pass both directions.

Off-site Material Transport

As with the on-site motor vehicle exhaust emissions, the off-site motor vehicle emission factors were derived using EMFAC2011. However, EMFAC2011-SG (scenario generator) was run for 2015 and 2019 using the entire San Joaquin Valley, all model years, and all vehicle speeds because off site vehicles would operate over local roads and highways at a range of speeds and conditions. EMFAC2011-SG can generate total emissions and total VMT for the fleet in a class of motor vehicles within a county, air basin, or other region for a particular study year. For this analysis, the San Joaquin Valley and calendar years 2015 and 2019 were selected to generate the inventories. The EMFAC2011 emission results for each vehicle class in tons per day were divided by the VMT per day to calculate the emission factors, expressed in grams per mile. The emission factors include exhaust emissions while trucks are starting and running. The following vehicle classes were used to represent the off-site motor vehicles associated with the proposed facility:

- HHDT (T7 Tractor): Aggregate trucks, asphalt trucks, liquid asphalt trucks, cement trucks, recycled asphalt and concrete trucks, propane trucks, diesel fuel trucks
- HHDT (T7 Single): Concrete trucks
- Light-Heavy-Duty Trucks: Outside services and miscellaneous visitors' vehicles
- Light-Duty Autos/Light-Duty Truck (LDA/LDT1/LDT2): Employee vehicles

The fugitive dust emissions from vehicles traveling on off-site paved roads were calculated using the same equations from Section 13.2.1 of AP-42 (EPA, 2011) as those for the on-site plant paved roads. The emission factors were calculated using the weighted average of the silt loading for freeways and arterial and collector roads within Fresno, Madera, Kings, and Tulare Counties from the CARB area-wide source methodology for paved roads in the San Joaquin Valley (CARB, 2006). The equations from Section 13.2.1 of AP-42 were developed using the average weight of all vehicles traveling on a roadway network, and not the individual weights of vehicle classes (e.g., HHDTs, automobiles). Consistent with the AP-42 approach, the average vehicle weight for the San Joaquin Valley (2.4 tons) from the CARB area-wide source methodology (CARB, 2006) was used to calculate the fugitive dust emissions from vehicles traveling on off-site paved roads. The value of 2.4 tons was used for all vehicle types rather than the weight-average of vehicle weights for all project-related vehicle types (e.g., aggregate trucks, employee vehicles) as was done for the calculation of fugitive dust emissions from vehicles traveling on on-site paved roads, where heavier vehicles would dominate the vehicle mix. The vehicle traffic generated by the Project would have little effect on the average weight of vehicles traveling in the region. While the average vehicle weight on off-site paved roads would remain essentially the same, these calculations account for the additional vehicle-miles traveled by the Project's vehicles.

Emissions from brake and tire wear were estimated using the same method as that for on-site plant paved roads; that is, the emission factors were obtained from the online version of EMFAC2011 multiplied by the travel distances. The brake and tire wear emissions were included in the estimated emissions of off-site paved road fugitive dust.

Total Facility Emissions

Table 3.3-12 through Table 3.3-15 present emissions totals for each scenario in tons per year and pounds per day. Refer to the discussion provided above in Section 3.3.5 and DEIR Appendix D, for detailed calculations.

Table 3.3-12 Summary of Daily Criteria Air Pollutant Emissions from the Total Facility (2015)

Source	ROG (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Mine	4.20	46.70	31.79	0.20	70.08	8.97
Aggregate Plant	—	—	—	—	35.41	5.55
Asphalt Plant	98.61	49.71	306.45	17.18	117.91	103.97
Concrete Plant	—	—	—	—	48.46	7.27
Portable Recycle Plant	—	—	—	—	9.22	1.25
General Plant Site	1.43	19.42	11.88	0.03	80.53	13.61
Off-Site Vehicles	16.00	463.23	74.45	0.83	16.86	9.19
Total Facility	120.24	579.06	424.57	18.24	378.47	149.81

Source: Dudek, 2013a.

Table 3.3-13 Summary of Annual Criteria Air Pollutant Emissions from the Total Facility (2015)

Source	ROG (ton/yr)	NOx (ton/yr)	CO (ton/yr)	SOx (ton/yr)	PM10 (ton/yr)	PM2.5 (ton/yr)
Mine	0.20	1.01	2.12	0.01	7.68	0.80
Aggregate Plant	—	—	—	—	1.20	0.19
Asphalt Plant	1.02	0.56	3.55	0.30	1.15	1.04
Concrete Plant	—	—	—	—	0.84	0.13
Portable Recycle Plant	—	—	—	—	0.09	0.01
General Plant Site	0.08	0.69	0.96	0.00	3.00	0.48
Off-Site Vehicles	0.44	11.93	2.30	0.02	0.45	0.25
Total Facility	1.74	14.19	8.93	0.33	14.41	2.90

Source: Dudek, 2013a.

Table 3.3-14 Summary of Daily Criteria Air Pollutant Emissions from the Total Facility (2019)

Source	ROG (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Mine	4.27	45.12	26.04	0.16	4.56	2.38
Aggregate Plant	—	—	—	—	35.41	5.55
Asphalt Plant	98.61	49.71	306.45	17.18	117.91	103.97
Concrete Plant	—	—	—	—	48.46	7.26
Portable Recycle Plant	—	—	—	—	9.22	1.25
General Plant Site	1.84	13.60	12.13	0.03	92.31	15.72
Off-Site Vehicles	12.44	279.14	59.64	0.84	14.12	6.63
Total Facility	117.16	387.57	404.26	18.21	321.99	142.76

Source: Dudek, 2013a.

Table 3.3-15 Summary of Annual Criteria Air Pollutant Emissions from the Total Facility (2019)

Source	ROG (ton/yr)	NOx (ton/yr)	CO (ton/yr)	SOx (ton/yr)	PM10 (ton/yr)	PM2.5 (ton/yr)
Mine	0.20	0.78	1.29	0.01	0.17	0.05
Aggregate Plant	—	—	—	—	4.42	0.70
Asphalt Plant	3.17	1.63	10.17	0.66	3.69	3.30
Concrete Plant	—	—	—	—	2.52	0.38
Portable Recycle Plant	—	—	—	—	0.15	0.02
General Plant Site	0.18	1.24	1.28	0.00	7.72	1.33
Off-Site Vehicles	1.01	22.81	4.99	0.07	1.14	0.53
Total Facility	4.56	26.46	17.73	0.74	19.81	6.31

Source: Dudek, 2013a.

3.3.5.4 Criteria Pollutant Modeling

The EPA-approved dispersion model American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), Version 12060, using AERMOD View by Lakes Environmental, Version 7.6.1, was used for the analysis to model the dispersion of the criteria pollutants and impacts on ambient air quality. The AERMOD model can estimate the air quality impacts of single or multiple sources using actual meteorological conditions.

AERMOD was configured with the following control parameters:

- Modeling switches: Regulatory defaults (except NO₂ modeling as described in APCD guidelines).
- Averaging periods: Hourly, 8-hour, 24-hour, and annual, depending on the pollutant.
- Choice of dispersion coefficients based upon land-use type: Rural.

AERMOD-ready meteorological data provided by the SJVAPCD for the most recent years available (2007 to 2011) at Fresno Yosemite International Airport (Station No. 93193) were used. The Fresno meteorological monitoring site is about 12.7 miles northwest of the proposed facility. A wind rose illustrating prevailing wind speeds and directions for the period from 2007 to 2011 is shown in Figure 3.3-2.

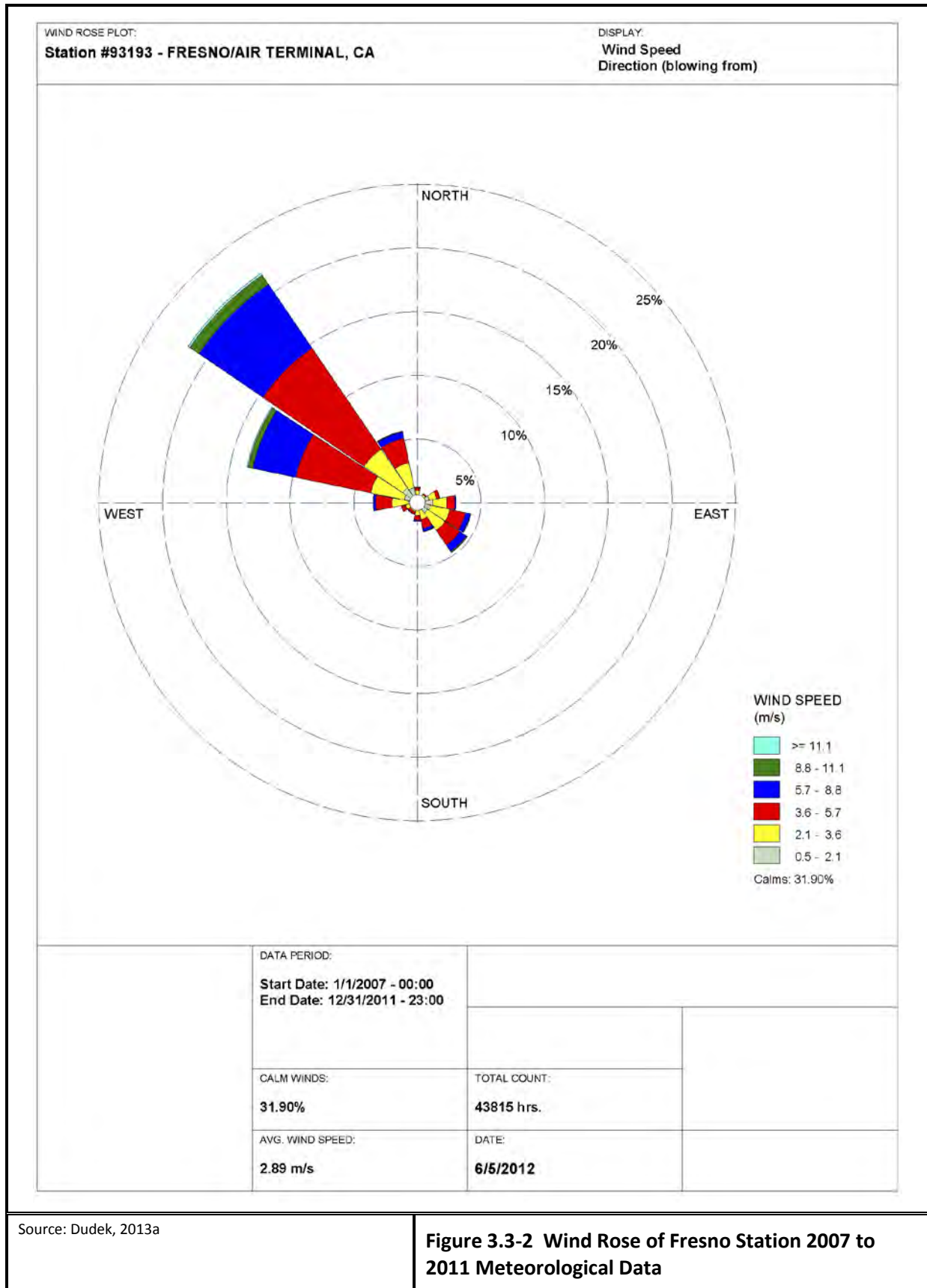
Source Characteristics

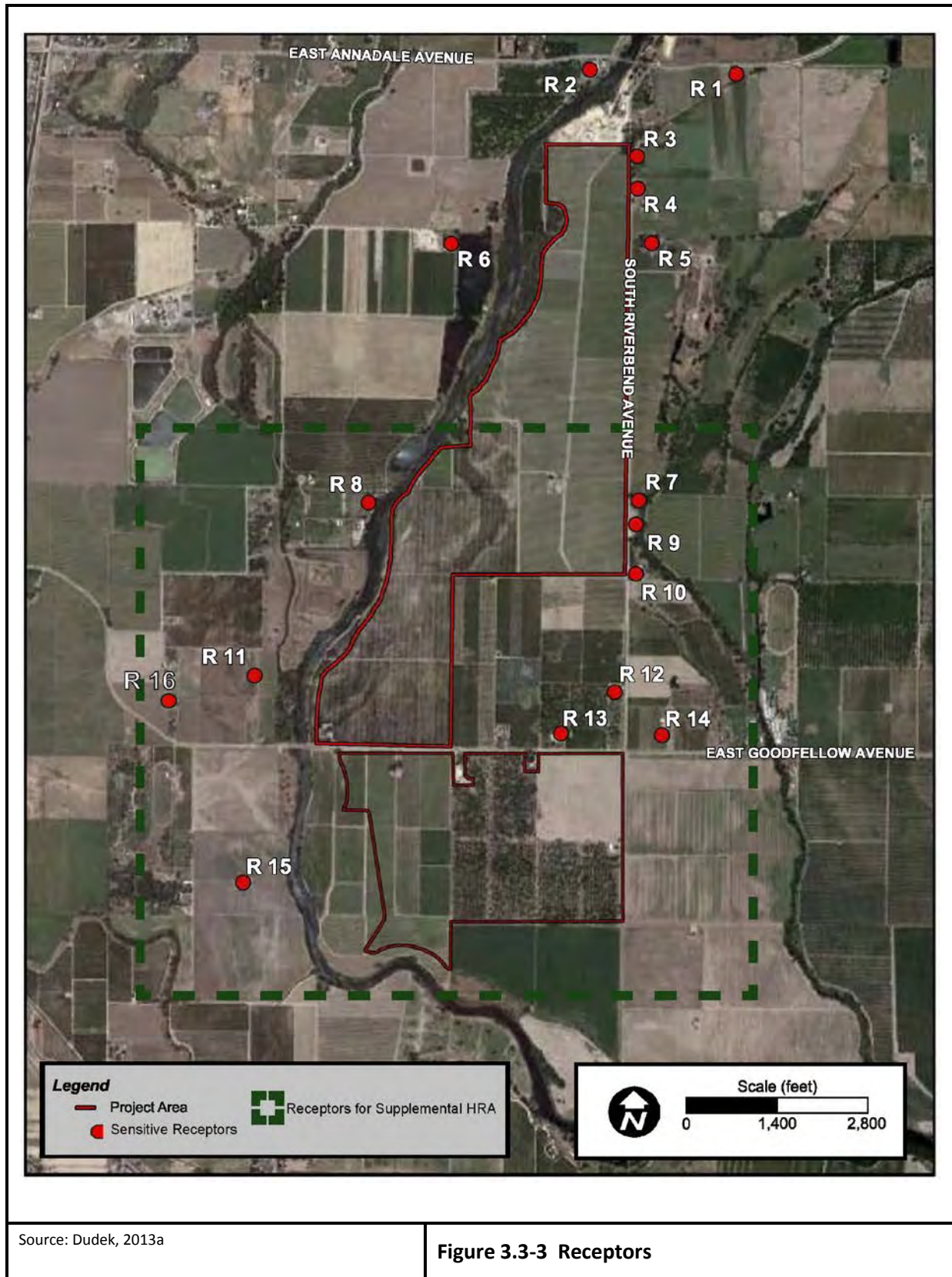
Exhaust emissions from diesel mobile equipment operating in the mine and general plant area were modeled using the volume source option in AERMOD and as a line source (series of alternating volume sources) on the haul road. Exhaust emissions from on-road trucks and automobiles traveling on the access road were modeled as a line source and as volume sources while traveling in the general plant site area since the location of the plant road has not been determined. The idling emissions from HHDTs were modeled as point sources at two locations on the property: the front gate (end of access road) and the general plant site area. Sources representing fugitive dust from paved and unpaved roads and surfaces were modeled using the area source option in AERMOD. In the absence of known physical characteristics, the particulate emissions from crushers, screens, conveyor transfer points, and other sources at the aggregate plant were modeled as several volume sources. Similarly, the emissions from the asphalt and concrete plants were also modeled as several volume sources because the physical and exhaust characteristics are not known.

Emissions Rates

While Riverbend does not propose to operate the facility 24 hours per day or 365 days per year, AERMOD was run assuming the sources could emit pollutants in any hour of the day to estimate the maximum hourly and daily impacts, and the annual emissions would be distributed over 365 days per year to estimate the maximum annual impacts. This approach tends to produce more conservative results because it includes night and early morning conditions, which are less favorable for good dispersion (e.g., higher atmospheric stability with less mixing, more calm wind periods). The daily and annual emission rates discussed in Section 3.3.5.3 for each source type (e.g., aggregate plant, off-road equipment, on-road vehicles) were converted to hourly rates for input into AERMOD depending on the pollutant as follows:

- NO_x: Daily emission rate divided by 8 hours/day; annual emission rate by 24 hours/day, 365 days/year
- CO: Daily emission rate divided by 8 hours/day
- SO_x: Daily emission rate divided by 8 hours/day; annual emission rate by 24 hours/day, 365 days/year
- PM₁₀: Daily emission rate divided by 24 hours/day; annual emission rate by 24 hours/day, 365 days/year
- PM_{2.5}: Daily emission rate divided by 24 hours/day; annual emission rate by 24 hours/day, 365 days/year.





Receptors

The land use in the vicinity of the proposed facility is generally agricultural (primarily row crops and orchards). The nearest residences are located along the eastern boundary of the Project site with several residences near the western boundary. The nearest existing workplaces are the Central Valley Ready-Mix facility located adjacent to the northern boundary of the Project site and the City of Sanger wastewater treatment plant located approximately 1.3 miles to the northwest of the center of the plant site. The Calaveras Materials, Inc. facility, which is in the process of commencing operation, is located adjacent to the southeastern boundary of the Project site. The GAMAQI defines sensitive receptors as those that are more susceptible to the effects of air pollution than the population at large (SJVAPCD 2002). Sensitive receptors may include long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, and childcare centers. For the purpose of this assessment, potential sensitive receptors included only residences. No schools, childcare centers, or hospitals within 2 miles of the Project site were identified. Figure 3.3-3, Sensitive Receptors, shows the location of the closest sensitive receptors.

Fenceline receptors were set at 25-meter intervals to a distance of 50 meters from the Project site boundary. Two additional Cartesian receptor grids were constructed. One grid, centered on the Project site, extended approximately 2000 meters from the property boundaries. The receptors in this grid were spaced at approximately 400 meter intervals. An additional densely spaced grid, approximately 780 meters by 600 meters with receptors placed every 40 meters, was constructed in the area immediately east of the access road along East Goodfellow Avenue. This grid was constructed to capture the impacts in the area bounded on three sides by the property owned by Running Luck Ranch, LLC.

Refined Method for 1-Hour NO₂

A new 1-hour NO₂ NAAQS, approved by the EPA Administrator on February 9, 2010, became effective on April 12, 2010. The new NAAQS, which is 100 parts per billion (or 0.100 ppm), is determined by evaluating the 3-year average of the 98th percentile of the annual distribution of daily maximum 1-hour concentrations. The California Air Pollution Control Officers Association has published Modeling Compliance of the Federal 1-Hour NO₂ NAAQS (CAPCOA, 2011), which contains several methods for analyzing whether a project's NO_x emissions would cause or contribute to an exceedance of the 1-hour NO₂ NAAQS. This air quality impact analysis for the Project uses the Tier 3, Option 5, ozone limiting method (OLM) in which the NO_x emissions exhausted from the combustion sources are split into NO and NO₂ depending on the temperature of the primary combustion source. Then, the 8th highest modeled concentration is added to the 98th percentile background concentration. For this analysis, the background concentration for Parlier is 42.33 parts per billion (or 0.042 ppm) (Dudek, 2013a). This is a non-regulatory default method as detailed in the CAPCOA guidance. The portion of the NO_x exhausted as NO₂ is determined in the model by the NO₂/NO_x in-stack ratio. This report uses in-stack ratios of 0.0688 for the dryer, 0.20 for off-road mobile equipment, 0.25 for medium- and light-duty trucks and automobiles, and 0.11 for heavy duty trucks (CAPCOA, 2011).

Refined Method for 1-Hour SO₂

A new 1-hour SO₂ NAAQS, approved by the EPA Administrator on June 22, 2010, became effective on August 23, 2010. The new NAAQS, which is 75 parts per billion (or 0.075 ppm), is determined by evaluating the 3 year average of the 99th percentile of the annual distribution of daily maximum 1-hour concentrations. The SJVAPCD has published 1-Hour SO₂ NAAQS Area Designation Modeling Protocol, which contains several methods for analyzing whether a project's SO_x emissions would cause or contribute to an exceedance of the 1-hour SO₂ NAAQS. The ambient air quality analysis for the Project follows Option 4, in which the 4th highest modeled value is added to the 99th percentile background concentration. The only SO₂ monitoring station in the SJVAB is located in Fresno. For this analysis, the background concentration for Fresno is 6.80 parts per billion (or 0.007 ppm) (Dudek, 2013a). The procedure for the CAAQS is unchanged from that for the other pollutants; that is, the maximum modeled concentration is added to the maximum 1-hour background concentration.

3.3.5.5 Health Risk Assessment

AERMOD Version 12060, and CARB's Hot Spots Analysis and Reporting Program (HARP) were used to model the air quality impacts of TAC emissions from Riverbend's proposed operations and to calculate the associated health impacts. The results from AERMOD were then processed using the "HARP On-Ramp" for input into HARP.

AERMOD was configured with the following control parameters:

- Modeling switches: Regulatory defaults.
- Averaging periods: Hourly and period.
- Choice of dispersion coefficients based on land-use type: Rural.

While Riverbend does not propose to operate the facility 24 hours per day or 365 days per year, AERMOD was run assuming the sources could emit TACs during any hour of the day and any day of the year to estimate the hourly and annual impacts. This approach tends to produce more conservative results because it includes night and early morning conditions, which are less favorable for good dispersion (e.g., higher atmospheric stability with less mixing, more calm wind periods). For use with HARP, an emission rate of 1.0 gram per second was used for each source in AERMOD. HARP then applies the hourly and annual emission rates to calculate the TAC concentrations and related health impacts.

In general, source parameters are the same as those described for criteria modeling in Section 3.3.5.4 above. An exception would be off-site emissions from trucks traveling on East Goodfellow Avenue. Exhaust emissions from on-road trucks and automobiles traveling on East Goodfellow Avenue were modeled as a line source separately from all other sources as described in the Supplemental HRA (Appendix D). Cancer risk at receptors is the sum of the risk from the Project (Appendix D) and East Goodfellow Avenue as reported in the Supplemental HRA (Dudek, 2013c). The receptors used in health risk assessment are shown on Figure 3.3-3.

Cancer Risk

The Project cancer risk calculations were performed by HARP. The exposure and risk equations that are used within HARP to calculate the cancer risk at residential and workplace receptors are taken from the California Environmental Protection Agency Office of Environmental Health Hazard Assessment (OEHHA) manual for health risk assessments prepared under the Air Toxics Hot Spots Program (OEHHA, 2003).

The potential exposure pathways included inhalation, dermal (skin), soil ingestion, ingestion of homegrown produce, and ingestion with mother's milk, as appropriate for an individual chemical. The cancer risk calculations for residential exposures assume that a residential receptor is exposed continuously for 70 years. This approach is intended to result in conservative (i.e., health protective) estimates of health impacts and is used for the sensitive receptors previously identified. The cancer risk calculations for workplace receptors use the assumed exposure periods in HARP (e.g., 8 hours per day, 245 days per year, 40 years). Because the proposed facility would typically operate 8 hours per day, 5 days per week, a ground level concentration (GLC) adjustment factor of 4.2 ($4.2 = 24/8 \times 7/5$) was applied in HARP to reflect less than a 24-hour-per-day, 7-day-per-week operation.

Cancer risks were evaluated using the inhalation and oral cancer potency factors published by OEHHA and CARB (CARB, 2012). These values are incorporated in the latest version of HARP. In accordance with guidance from SJVAPCD staff, the cancer risks were calculated using the "derived [OEHHA]" approach described in the HRA Guidelines (OEHHA, 2003).²

Cancer risk was assessed separately for diesel particulate matter from Project traffic on East Goodfellow Road. The cancer risk was calculated in a spreadsheet using the methodology in the HARP model and approved by SJVAPCD (Appendix D).

Non-Cancer Risk

The chronic and acute hazard indices were evaluated using the OEHHA/CARB inhalation and oral (for chronic effects only) Reference Exposure Levels (RELs). The REL is the concentration (inhalation) or daily dosage (noninhalation) at or below which no adverse health effects are anticipated. The acute and chronic noncancer inhalation hazard indices for the Project were calculated within HARP by dividing the modeled annual average concentrations of the TACs by their REL. The acute and chronic RELs used in this assessment are those published by OEHHA and CARB, which are incorporated in HARP (CARB, 2012).

² For the "derived [OEHHA]" cancer risk in a multipathway analysis for residential receptors, the cancer risk from each pathway is calculated using the high-end exposure variates for all pathways. Then, the cancer risks for the pathways with the two highest cancer risks are added to the cancer risks from the rest of the pathways calculated with the average exposure variates. The final cancer risk calculation uses a combination of high-end and average exposure variates.

3.3.5.6 Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

As discussed in previous sections, Calaveras Materials Inc.(CMI) currently operates the Kings River Sand and Gravel mining operation under CUP 3052 adjacent to the Project site and to the east and southeast. Although preliminary in concept, future operators of CUP 3052 may be interested in an agreement with Riverbend to mine Phases 6A, 6B and 7 and process the excavated material at the CUP 3052 plant. If this agreement were to be made, and CUP 3052 was amended to import material from Riverbend, the materials from Phases 6A, 6B and 7 would still be excavated by an electric dragline following overburden removal by off-road equipment and transported to the CUP 3052 plant by electric conveyor. The CUP 3052 plant would continue to operate as it had in the past, except with materials from Riverbend.

Once the Riverbend processing plant is in operation, the CUP 3052 plant and the Riverbend plant would be operational. Both plants will continue to operate even if materials from Phases 6A, 6B and 7 are processed at the CUP 3052 plant. Processing material from Phases 6A, 6B and 7 at the CUP 3052 plant would not increase production levels at the CUP 3052 plant. The CUP 3052 plant would still have to operate in compliance with its Permit to Operate from the SJVAPCD and the CUP 3052 mitigation measures would still be in place (e.g. comply with SJVAPCD's Regulation VIII to reduce PM10 emissions). Therefore, air quality impacts at CUP 3052 and the Riverbend processing plants and excavation would not change or increase by processing Phases 6A, 6B and 7 materials at the CUP 3052 plant. The Riverbend EIR analyzes Riverbend impacts and cumulative impacts of both and the CMI EIR (SCH # 2004081114) analyzed the impacts of the CMI plant. Thus, the Project impacts as analyzed in this Draft Environmental Impact Report conservatively represent both the conditions under the proposed Project, and under a Project with processing of materials from Phases 6A, 6B and 7 at the CUP 3052 plant.

3.3.6 Project Level Impacts and Mitigation Measures

3.3.6.1 Conflicts with or Obstructs Implementation of an Air Quality Plan

Impact Statement

Impact AQ-1: Would the Project conflict with or obstruct implementation of an applicable air quality plan? (CEQA Guidelines Threshold Criteria (a), Additional Threshold (1))

Impact Analysis

Construction Activities

The Project would include an initial construction phase during which the access road would be installed and paved; and equipment for the aggregate plant, asphalt plant, and concrete plant would be brought on-site. Support buildings and parking areas would also be built. At the present time, specific processing equipment, engineered plant layouts, and construction plans have not been determined. Minimal grading would be required for these areas since the existing agricultural land is already flat; however, removal of existing orchard trees and other vegetation would be required. Construction of the Project

would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials to the Project site. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. Fugitive dust emissions would primarily result from fine grading and site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles. On-site activities associated with construction would comply with SJVAPCD Regulation VIII; thus, fugitive emissions would be minimized (to less than significant levels in accordance with SJVAPCD CEQA guidance). All delivery trucks and construction equipment would be in a fleet that complies with the ATCMs for in use diesel-fueled on-road and off-road vehicles, respectively. Because these construction activity levels will be less than during operations, and will only occur for a relatively brief period of time, air quality impacts from Project construction were not quantitatively determined. By assessing air quality impacts from Project operations starting with the calendar year representing the earliest potential approval date for this Project, the air quality impact assessment is conservative.

Mining and Processing Operations

The Project is not expected to conflict with or obstruct implementation of applicable air quality plans. Although significant air quality impacts would occur as a result of the Project, the Operator would be required to comply with regional air quality rules promulgated by the SJVAPCD and participate in reducing air pollutant emissions. Additionally, Project design features are provided to reduce the level of significant impacts to the maximum extent feasible. Lastly, aggregates production is proportional to population growth which is a factor that is accounted for in air quality plans. Therefore, the Project would not obstruct implementation of the applicable SJVAPCD air quality plan.

Level of Significance Before Mitigation

Less Than Significant.

Mitigation Measures

Mitigation is not required for impacts that are less than the level of significance.

Level of Significance After Mitigation

Not applicable. The Project impact is less than the level of significance without mitigation.

3.3.6.2 Ambient Air Quality Standards

Impact Statement

Impact AQ-2: Would the Project cause the Project to violate any air quality standard or contribute substantially to an existing or projected air quality violation? **(CEQA Guidelines Threshold Criteria (b); Additional Thresholds (1), (3), and (7))**

Impact Analysis

Construction Emissions

See discussion under Section 3.3.6.1.

Mining and Processing Operations

Emissions of PM₁₀, PM_{2.5}, NO_x, CO, and SO₂ were modeled for comparison to AAQS. Maximum modeled concentrations (i.e. maximum predicted concentrations outside of the Project boundary) are compared to California and/or Federal AAQS for the Point of Maximum Impact (PMI). Modeled concentrations and ambient air concentrations are presented in Table 3.3-16.

Table 3.3-16 Localized Impacts at Point Maximum Impact (PMI)

AAQS	Back-ground ^a	Project Impact	Total	AAQS	SIL ^b	Back-ground Exceeds AAQS?	Project Exceeds AAQS or SIL?	Project + Back-ground Exceed AAQS?	Potentially Significant Impact?
NO ₂ 1 hr CA (ppm)	0.044	0.71	0.75	0.18	None	No	No	Yes	Yes
NO ₂ 1 hr US (ppm)	0.042	0.26	0.302	0.100	0.004	No	Yes	Yes	Yes
NO ₂ Annual (ppm)	0.009	0.0001	0.010	0.030	None	No	No	No	No
PM ₁₀ 24 hr CA (µg/m ³)	114	170	284	50	10.4	Yes	Yes	Yes	Yes
PM ₁₀ 24 hr US (µg/m ³)	114	170	284	150	10.4	No	Yes	Yes	Yes
PM ₁₀ Annual (µg/m ³)	32.3	14.0	46.3	20	2.08	Yes	Yes	Yes	Yes
PM _{2.5} 24 hr (µg/m ³)	77.8	89.8	167.6	35	2.5	Yes	Yes	Yes	Yes
PM _{2.5} Annual (µg/m ³)	15.4	3.3	18.7	12	0.63	Yes	Yes	Yes	Yes
CO 1 hr (ppm)	3	5.0	8.0	20	None	No	No	No	No
CO 8 hr (ppm)	1.73	16	3.3	9.0	None	No	No	No	No
SO ₂ 1 hr CA (ppm)	0.016	0.10	0.14	0.25	None	No	No	No	No
SO ₂ 1 hr US (ppm)	0.007	0.12	0.127	0.075	None	No	Yes	Yes	Yes
SO ₂ 24 hr (ppm)	0.007	0.001	0.01	0.004	None	No	No	No	No

a See Table 3.3-1

b. Significant Impact Level (SIL) is applied to address cumulative impacts from pollutants for which the air basin is in non-attainment. SJVAPCD published SILs for PM₁₀ and PM_{2.5} in an email to the modeling distribution list (Appendix D).

The ambient air quality impacts resulting from the Project would not result in exceedances of the ambient air quality standards for NO₂ (annual average), CO (1-hour and 8-hour averages), SO₂ (1-hour CAAQS, 24-hour and annual averages). The Project could, however, cause or contribute to exceedances of the NAAQS and CAAQS for NO₂ (1-hour), SO₂ (1-hour NAAQS), PM₁₀ (24 hour and annual averages) and PM_{2.5} (annual and 24 hour averages). The exceedances of these standards would occur near the Project site boundary in locations that would not generally be inhabited for long periods. The Project would contribute substantially to exceedances of the CAAQS for PM₁₀ (24-hour average) in areas that

are inhabited, such as local residences. The Project may also contribute substantially to exceedances of the NAAQS for NO₂ (1-hour) at residential receptor R12 (Figure 3.3-3).

NO₂ emissions from the Project are considered to be significant based on the 1-hour AAQS. The 1-hour SO₂ AAQS may also be exceeded with the Project. PM₁₀/PM_{2.5} emissions from the Project are considered to be significant localized impacts based on the dispersion modeling evaluation of predicted maximum ambient concentrations versus the AAQs and the Project's contribution versus the SILs.

PM₁₀ and PM_{2.5} emissions are estimated to be significant in terms of compliance with ambient air quality standards. The largest contributors to offsite ambient concentrations of these pollutants are emissions from paved and unpaved roads, fugitive dust from other unpaved areas, and material handling in the processing area. Unpaved roads would be controlled with water and/or chemical suppressants, and replaced with conveyors as production increases. Paved roads would be cleaned periodically to remove accumulated surface dust. Fugitive dust from other unpaved areas would be controlled with frequent application of water and/or chemical suppressants. Material handling in the processing area would be controlled by water spray/fogging, and would be required to meet Best Available Control Technology where applicable. All sources of fugitive dust would meet Regulation VIII requirements. As discussed in Section 3.3.5.1, Project design features and environmental protection measures incorporated into the Project include the following:

- Prior to removal of topsoil and overburden, the area would be irrigated or sprayed by water trucks, as necessary to comply with air quality regulations.
- Excavated aggregate would contain approximately 10% natural moisture from having been excavated below the groundwater level.
- Water trucks would be utilized to wet down unpaved and asphalt plant and haul roads.
- Dust palliatives, such as lignin sulfonate or magnesium chloride, would be applied to the main haul roads as necessary.
- The first half mile of the entrance road would be paved with asphalt and would be at least 24 feet wide. In addition, the main access roads to the Plant Site, ready-mix concrete plant and asphalt plant would be paved with asphalt.
- A wheel washer would be installed after the scales immediately before egress on paved roads to prevent trackout to the public highway.
- The off-road fleet of vehicles and mobile equipment would meet applicable performance standards (e.g. diesel Air Toxic Control Measures (ATCMs)).
- The processing plant would wash materials, thereby minimizing dust during processing. It would be equipped with water sprays and, if necessary, other emissions control devices if required by the SJVAPCD, at key emission points, including crushers, fine and coarse screens, and conveyor transfer points.

- The HMA plant would be equipped with a baghouse for the dryer/batch tower and a fiberbed filter (or equivalent) for the silos and truck loadout.
- The RMC plant would control fugitive emissions and dust by using a baghouse at the truck loadout, filter vents during silo loading and water sprays as necessary at the sand and aggregate conveyor drops.
- Air pollution control equipment would meet Best Available Control Technology.

Further, as discussed above, the Project would have to comply with all applicable SJVAPCD rules, including compliance with Best Available Control Technology as applied during the New Source Review.

Level of Significance before Mitigation

Potentially significant.

Mitigation Measures

Implementation of Project design features in conjunction with applicable SJVAPCD existing rules would reduce the level of significant impacts. However, there are no feasible mitigation measures beyond those already incorporated into the Project, and the impacts would remain significant and unavoidable.

Level of Significance after Mitigation

As discussed above, even with the implementation of all feasible control measures incorporated into the Project, the impacts would remain significant and unavoidable.

3.3.6.3 Cumulatively Considerable Increase of Non-Attainment Pollutant

Impact Statement

Impact AQ-3: Would the Project cause a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (CEQA Guidelines Threshold Criteria (c); Additional Threshold (2))

Impact Analysis

Construction Activities

See discussion under Section 3.3.6.1.

Mining and Processing Activities

Emissions estimates compared to SJVAPCD mass emissions thresholds are shown in Table 3.3-17 for the maximum scenario proposed of 1.25 MMtpy produced (2019 scenario).

As shown in Table 3.3-17, regional effects of the Project have the potential to result in significant impacts by exceeding the threshold for NO_x. The significance thresholds for ROG and NO_x are based on SJVAPCD Guidance. SJVAPCD staff has recommended a threshold of 15 tons per year for PM₁₀; however, that recommended threshold has not been adopted by the SJVAPCD or Fresno County as a CEQA significance threshold. As such, Project PM₁₀ emission rates would be considered less than significant if the Project were to comply with SJVAPCD Regulation VIII (Fugitive Dust Prohibited). Regulation VIII would be applicable to Project construction and operation. Thus, PM₁₀ emission rates associated with the Project would be less than significant as discussed in the GAMAQI (SJVAPCD, 2002) and SJVAPCD website.³

Table 3.3-17 Impacts on Regional Air Quality (2019 or Full Buildout)

	ROG (tpy)	NO _x (tpy)	PM ₁₀ (tpy)
Total On-site Emissions ¹	3.6	3.3	18.7
Total Off-site Emissions	1.0	22.8	1.1
Total Emissions	4.6	26.5	19.8
Significance Thresholds ²	10	10	None ²
Potentially Significant Impact?	No	Yes	No , after compliance with Reg. VIII ²

Source: Dudek, 2013a.

1. Total on-site emissions include total stationary source emissions and vehicular/mining emissions.

2. A PM₁₀ emissions-based significance threshold has not been formally adopted. Compliance with SJVAPCD Regulation VIII would result in a less than significant PM₁₀ impact.

tpy = tons per year

If not for the off-site NO_x emissions from on-road vehicles, the impact from NO_x emissions would be considered to be less than significant, and these emissions represent by far the majority of the NO_x emissions from the Project. On-road vehicles are owned by suppliers and customers of the Project, and the particular make, model, and emission rate of these sources are not under the control of the Project. Therefore, requiring that these vehicles meet emission mitigation levels is not a feasible option.

In addition, although the off-site potential to emit (PTE) is included in the impact analysis for the Project, the Project materials would substitute for some materials shipped in the baseline while providing a local source of aggregates to meet forecasted increases in demand. As discussed below, the Project's fair share of the future increase in truck trips is much less than the PTE of those trucks.

³ <http://www.valleyair.org/transportation/ceqaanalysislevels.htm#thresholds>

As defined in SJVAPCD Rule 2201, PTE means “the maximum capacity of an emissions unit to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including pollution control equipment and restrictions in hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is incorporated into the applicable permit as an enforceable permit condition.”

In this case, the physical or operational limitation is the size of the aggregate market. From a regional perspective the majority of aggregate related truck trips occurs in the baseline and was attributed to others. The difference between PTE and CEQA approaches to emissions calculation is primarily that PTE is source-centric in quantifying emissions and does not account for baseline activities of others. Conversely, CEQA is environment-centric requiring regional impact assessment which, in the case of aggregates, would include existing truck trips for which Project truck trips may substitute or be in addition too.

The effect of acknowledging the regional baseline and attributing only the fair share of new trips to the Project results in the reasonably foreseeable change in regional emissions of NO_x with respect to the regional baseline levels. This approach produces an emissions estimate for off-site truck travel (5.5 tpy) that is less than 25% of the PTE for off-site truck travel (22.8 tpy). Supporting calculations are presented in Appendix D.

The Production-Consumption (P-C) Region consists of Fresno and Madera counties. P-C Regions are established for areas within which the aggregates production and consumption balance (i.e., not much “leakage” across P-C Region boundaries). Historically, the long term average amount of aggregates used within a P-C region has been shown to be proportional to the population in the region.

Introduction of a new source of aggregates does not increase the consumption of aggregates because the demand for aggregates is inelastic (Berck, 2005). Therefore, the amount of aggregates consumed is independent from the number of available aggregates resources. In the first years of a project it is foreseeable that the aggregates will primarily substitute for aggregates produced elsewhere in the baseline. Early in the Project the majority of truck trips will not be new trips.

However, the consumption of aggregates increases as time progresses because the population in the P-C Region is increasing. The California Geological Survey has determined that 5.57 tons per person per year are used in the P-C Region. The Region is estimated to have 1,137,162 residents in the Year 2014 before the Project would begin. This would correspond to a demand of 6,333,932 tons per year in 2014.

Between 2014 and 2015, the population of the P-C Region is forecasted to grow to 1,150,526 residents and the aggregates market size is forecasted to be 6,408,431 tons per year; an increase of 72,439 tons per year. CEQA would require assessment of the impact of the amount that exceeds baseline. In 2015 the Project would produce 350,000 tons per year which constitutes 5.5% of the market. Thus, the Project’s fair share of the increase in regional aggregates use would be 5.5% of 72,439 tons; or 4,066

tons per year. This amount corresponds to 8,131 VMT/yr for aggregates and 10,184 VMT/yr for all truck trips. NO_x emissions of 0.11 tpy from truck travel is the Project's fair share of increase above regional baseline as compared to the NO_x PTE shown in Table 3.3-13 (11.93 tpy) which is approximately one hundred times greater. Calculation of aggregates and other truck trip VMT is described further in Section 3.7.

By 2020, the population of the P-C Region is forecasted to grow to 1,256,784 residents and the aggregates market size is forecasted to be 7,000,287 tons per year which is an increase of 666,295 tons per year. The Project would produce 1,250,000 tons per year which constitutes 17.9% of the market. Thus, the Project's fair share of the increase in regional aggregates use would be 17.9% of 666,295 tons; or 118,976 tons per year. This amount corresponds to 237,953 VMT/yr for aggregates and 298,043 VMT/yr for all truck trips. NO_x emissions of 1.5 tpy from truck travel is the Project's fair share of increase above regional baseline as compared to the NO_x PTE shown in Table 3.3-15 (22.81 tpy) which would be approximately fifteen times greater.

The emissions characteristics of the truck fleet improve over time. In 2015, the average truck emits NO_x at an average rate of 9.94 g/VMT. By 2020, the average truck emits NO_x at a rate of 4.64 g/VMT. 2035 is the final year for which CARB has published emissions factors in EMFAC2011. The average truck will emit NO_x at a rate of 2.08 g/VMT in 2035 and thereafter. As population and market demand for aggregates continues to grow over time, the Project does not grow after 2019 and so the Project represents a smaller and smaller fraction of the market.

Review of the calculations for each year (Appendix D) shows that the maximum year would have off-site NO_x emissions of 3.1 tpy. When added to on-site NO_x emissions (3.3 tpy), the Project would total 6.4 tpy which is less than the significance threshold. Thus, the potential to emit approach which is customary to use for air permitting purposes would predict a significant impact but the CEQA baseline fair share approach would predict a less than significant impact.

Lastly, in order to determine the possible effect of Project emissions on regional pollutant levels and associated health risk, the mass of emissions from the Project is compared to the mass of emissions in the County and SJVAB as shown in Table 3.3-18. On the peak day, the Project would represent less than one tenth of one percent (i.e., less than 0.1%) of emissions within the SJVAB and on the average day would be less than three hundredths of one percent (i.e., less than 0.03%). Thus, the Project contribution to the concentrations of non-attainment pollutants, associated health effects, and number of days exceeding the AAQS would not be substantial and is considered less than significant.

Table 3.3-18. Ozone Precursor Emissions for Air Basin, County, and Project

	VOC (TPD)	NO_x (TPD)	PM₁₀ (TPD)	PM_{2.5} (TPD)
SJVAB	357.9	325.2	281.6	75.6
Fresno	68.47	66.6	74.22	19.42
Project (AAD)	0.0125	0.0727	0.0544	0.0173
Project (Peak Day)	0.0586	0.1938	0.1610	0.0714
% of SJVAB (AAD)	0.004%	0.022%	0.019%	0.023%
% of Fresno (AAD)	0.018%	0.109%	0.073%	0.089%
% of SJVAB (Peak Day)	0.016%	0.060%	0.057%	0.094%
% of Fresno (Peak Day)	0.086%	0.291%	0.217%	0.368%

TPD = Tons per Day

Level of Significance before Mitigation

Potentially significant.

Mitigation Measures

No feasible mitigation measures exist that would reduce the Project potential to emit impact on NO_x to a less than the significance threshold (10 tpy). The Project is electrified to the maximum extent feasible and cannot reduce emissions from on-road trucks owned by Project customers and suppliers, which constitute the source of the majority of Project NO_x emissions.

The Project could enter into a Voluntary Emissions Reduction Agreement (VERA) with SJVAPCD in which the Project would pay for SJVAPCD to direct emissions reduction projects so that the reductions can offset Project emissions increases above the significance thresholds. However, the Project will repower, replace, and/or retrofit diesel engines in Project-owned off and on-road vehicles as will be necessary to comply with the CARB diesel engine regulations and has committed to electrifying much of the process that would otherwise require diesel-fueled vehicle operation. In light of the fact that there is substantial evidence in the fair share analysis (Appendix D) to indicate that the Project impact may be less than significant, these actions are considered to satisfy the Project's fair share of mitigations necessary to address the cumulative impact on regional ozone concentrations. Therefore, additional mitigation is not feasible.

Level of Significance after Mitigation

The impact is significant and unavoidable.

3.3.6.4 Exposure of Sensitive Populations

Impact Statement

Impact AQ-4: Would the Project expose sensitive receptors to substantial pollutant concentrations? (CEQA Guidelines Threshold Criteria (d); Additional Thresholds (5) and (6))

Impact Analysis

To address whether the Project would expose the public, specifically sensitive receptors, to substantial pollutant concentrations, the concentrations of both toxic and criteria pollutant were evaluated and compared to applicable health standards. Sensitive receptors may include long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, schools, playgrounds, and childcare centers. There are none of these within 2 miles of the Project site. However, there are several residences which were considered as sensitive receptors.

Toxic Air Contaminants Health Effects

A health risk assessment was performed as discussed in Section 3.3.5.5 to evaluate the effects of toxic air contaminants including diesel particulate matter from vehicles and various substances found in industrial plant emissions.

Table 3.3-19 shows the maximum cancer risk at residential receptors near the Project and along East Goodfellow Road. It should be noted that these cancer risks reflect the maximum truck trips discussed in Section 3.3.5.2. Furthermore, the cancer risks for 2015 and 2019 reflect the risks that would occur if the emissions for each of those years continued at the same rate for 70 years. The combined cancer risk is a weighted average assuming the cancer risk associated with 2015 operations would occur for 4 years from Project startup in 2015 until 2018, and the cancer risk associated with 2019 operations would occur for the remaining 66 years.

Diesel particulate matter emissions from on-road trucks would continue to decrease due to increasing stringent emissions standards and turnover in the fleets; thus, these estimated combined cancer risks are considered a conservative over prediction of conditions over the life of the Project. Among the modeled sensitive receptors, the maximally exposed residential receptor in both the 2015 and 2019 scenario is R8 (see Figure 3.3-3) on the west side of the proposed facility. For the modeled sensitive receptors along East Goodfellow Avenue, the maximally exposed residential receptor with the highest contribution from truck emissions in both the 2015 and 2019 scenarios is R16. The cancer risks at these points of maximum impact are 6.3 in 1 million, which is much less than the SJVAPCD significance threshold of 10 in 1 million for cancer impacts.

Table 3.3-19 Cancer Risk Results

Receptor	2015 Scenario ¹	2019 Scenario ²	Combined Cancer Risk
<i>Maximally Exposed Individual – Residential</i>			
Initial Health Risk Assessment	4.2×10^{-6}	6.4×10^{-6}	—
East Goodfellow Avenue Trucks	2.9×10^{-8}	5.0×10^{-8}	—
Total Cancer Risk	4.2×10^{-6}	6.4×10^{-6}	6.3×10^{-6}
<i>Maximally Exposed Individual – East Goodfellow</i>			
Initial Health Risk Assessment ³	2.5×10^{-6}	9.5×10^{-7}	—
East Goodfellow Avenue Trucks	1.3×10^{-6}	2.3×10^{-6}	—
Total Cancer Risk	3.8×10^{-6}	3.3×10^{-6}	3.3×10^{-6}

¹ The maximally exposed residential receptor in the 2015 scenario is R8 and the maximally exposed residential receptor along East Goodfellow Avenue is R16 (see Figure 3.3-3).

² The maximally exposed residential receptor in the 2019 scenario is R8 and the maximally exposed residential receptor along East Goodfellow Avenue is R16 (see Figure 3.3-3).

³ Receptor R16 was not modeled in the initial health risk assessment. The values shown are for R11, which is closer to the plant site. Thus, the estimated cancer risk at R16 would have likely been lower than that for R11.

Table 3.3-20 Summary of Maximum Modeled Acute Noncancer Risk Impacts

Receptor	2015 Scenario ¹ (H.I.)	2019 Scenario ² (H.I.)
Point of Maximum Impact	0.7	0.7
Maximally Exposed Individual – Residential	0.7	0.7
Maximally Exposed Individual – Workplace	0.1	0.1

1. The maximally exposed residential receptor in the 2015 scenario is R8 and the maximally exposed workplace is the Kings River Sand and Gravel facility (see Figure 3.3-3).

2. The maximally exposed residential receptor in the 2019 scenario is R8 and the maximally exposed workplace is the Kings River Sand and Gravel facility (see Figure 3.3-3).

Table 3.3-21 Summary of Maximum Modeled Chronic Health Impacts

Receptor	2015 Scenario ¹ (H.I.)	2019 Scenario ² (H.I.)
Point of Maximum Impact	0.10	0.36
Maximally Exposed Individual – Residential	0.10	0.36
Maximally Exposed Individual – Workplace	0.01	0.03

1. The maximally exposed residential receptor in the 2015 scenario is R8 and the maximally exposed workplace is the Kings River Sand and Gravel facility (see Figure 3.3-3).

2. The maximally exposed residential receptor in the 2019 scenario is R8 and the maximally exposed workplace is the Kings River sand and gravel facility (see Figure 3.3-3).

The maximum acute and chronic hazard indices (H.I.) at selected receptors are shown in Table 3.3-20 and Table 3.3-21. The maximally exposed residence in both the 2015 and 2019 scenario is R8 (see Figure 3.3-3) on the west side of the proposed facility. The maximally exposed workplace is the Kings River Sand and Gravel facility, to the south of the Project site. The acute and chronic hazard indices at the points of maximum impact are 0.7 H.I. and 0.36 H.I., which are each less than the SJVAPCD significance threshold of 1.0 for non-cancer health impacts from TACs.

Lastly, the Project would not store hazardous substances or acutely hazardous substances in quantities that would be subject to chemical accident prevention provisions of the Clean Air Act or the implementing regulation (40 CFR Part 68).

Criteria Pollutant Health Effects

There is not a straight forward method for quantifying health effects associated with criteria pollutants. Numerous health standards and thresholds have been established, but none that provide a precise way of quantifying health effects associated with ambient concentrations of criteria pollutants. Therefore, the analysis for Impact AQ-4 (Would the Project expose sensitive receptors to substantial pollutant concentrations?) has two parts. First it addresses whether the Project would result in a “substantial” off-site concentration of criteria pollutants and then it compares these concentrations to relevant health standards in order to put the potential health effect into perspective.

The AAQS is the accepted standard at which there are no health effects. Therefore, it is reasonable to assume that concentrations slightly above the AAQS would not be substantial or result in a significant adverse health effect. Twenty five percent is commonly used by regulatory agencies as a point for distinguishing between a minor/insubstantial change and a major/substantial change. For example, the hazardous waste management regulations under the Resource Conservation and Recovery Act (RCRA) 40 CFR 270.42 Appendix I states that if an increase to the hazardous waste storage capacity at a hazardous waste treatment facility is 25% or less, then it would be considered only a minor modification to the facility.

For the purposes of this impact analysis, if the modeled off-site concentration of a criteria pollutant is less than 25% above the AAQS, then it was considered to be less than a substantial concentration and would not have a significant health effect. If a concentration was greater than 25% over the AAQS, then the potential health effects were further evaluated.

The following identifies the health standards and thresholds used in this analysis. These standards are discussed in the pollutant specific sections below as they relate to individual criteria pollutants being evaluated and in detail in the Memorandum Health Risk from Criteria Pollutants Riverbend Sand and Gravel (Sespe, 2014) located in Appendix D of this DEIR. Health effects associated with each criteria pollutant are also described in Section 3.3.2 above.

Ambient Air Quality Standards: The AAQS are extremely conservative levels that allow decision makers to feel comfortable that if concentrations are below those standards there will be no health effects, even to sensitive receptors. Therefore, the AAQS are considered a “no impact” threshold.

SJVAPCD Health Based Implementation Strategy: This is a health risk based strategy developed in 2010 to guide the agency in prioritizing projects and as an alternative to using the NAAQS to more effectively evaluate health impacts of certain pollutants.

Reference Exposure Level (REL): RELs are defined by the Office of Environmental Health Hazard Assessment (OEHHA) as the concentration level at or below which no health effects are anticipated for specified exposure duration. RELs are based on the most sensitive, relevant adverse health effect reported in medical and toxicological literature. RELs are designed to protect the most sensitive individuals in the population by inclusion of margins of safety. Therefore concentrations exceeding the REL do not indicate an adverse health effect. In addition, SJVAPCD does not require mitigations under AB2588 unless the concentration is greater than five times the REL (i.e., hazard index > 5.0) or cancer risk is greater than 100 excess cancer cases per million people exposed.⁴

Hazard Index: The Hazards Indices (HI) as discussed above in Section 3.3.5.5 Health Risk Assessment are normally applied to toxic air contaminants (TACs) and not criteria pollutants. However, even though particulate matter is a criteria pollutant, it can be speciated into potentially toxic **constituents** for this analysis.

Once a REL is established for a pollutant, the HI can be calculated. Each pollutant concentration is divided by the REL to determine the HI. If the HI is less than 1.0, the potential health effect is considered low. If the HI is 1.0 it may have a mild adverse effect which is described by OEHHA as an effect which would be associated with mild subjective complaints with few to no objective findings. The SVAPCD manages HIs greater than 1.0 and less than 5.0 by requiring notification of individuals potentially exposed and for HI greater than 5.0, the SVAPCD requires mitigation of the hazard. The health effects associated with RELs and HIs are discussed in detail in the Memorandum Health Risk from Criteria Pollutants Riverbend Sand and Gravel (Sespe, 2014) located in Appendix D of this DEIR.

CalOSHA and ACGIH: There are standards set by California Office of Safety and Health (CalOSHA) and by the American Conference of Governmental Industrial Hygienists (ACGIH) for worker safety. These are health based standards developed for worker exposure that identify the maximum time weighted average (TWA) concentration considered safe for a worker to be exposed over various different time periods (i.e.; 15 minutes, 8 hours, 40 hour workweek).

Immediately Hazardous to Life and Health (IDLH): The IDLH is defined by the US National Institute for Occupational Safety and Health (NIOSH) as exposure to airborne contaminants that is "likely to cause

⁴ http://www.arb.ca.gov/ab2588/district_levels.htm

death or immediate or delayed permanent adverse health effects or prevent escape from such an environment.

The following sections provide a discussion of the potential health effects associated with the off-site concentrations of criteria pollutants. Table 3.3-22 provides a comparison of the maximum off-site concentrations of criteria pollutants to health standards used in the analysis. The off-site concentrations used in this analysis and identified in Table 3.3-22 represent extremely conservative estimates for the Project. The following are examples of the conservative assumptions used in this analysis:

- Maximum production rates were always assumed;
- While the Project does not propose to operate the facility 24 hours per day or 365 days a year, the emission modeling assumed that the sources could emit pollutants in any hour of the day distributed over 365 days a year. This approach includes less favorable conditions for dispersion such as night and early morning conditions that are typically more stable (less windy) resulting in less dispersion and high pollutant concentrations.
- Worst case background data was used (i.e.; the 98th or 99th percentile for three consecutive years was averaged to represent the met data used in the modeling).

Table 3.3-22. Potential Health Effects Compared to Project Criteria Pollutant Concentrations

Chemical	Project only Off-site Receptor	Project plus Background at Off-site Receptor	AAQS	ACGIH (TWA)	OEHHA (REL)	CalOSHA	IDLH	Other
Nitrogen Dioxide (1 ppm = 1,880 µg/m ³)	0.18 ppm	0.22 ppm	0.18 ppm 1-hr, CAAQS	0.2 ppm	0.25 ppm	1.0 ppm STEL	20.00 ppm	0.11 ppm odor threshold.
	0.07 ppm	0.11 ppm	0.10 ppm 1-hr, NAAQS					
	0.001 ppm	0.010 ppm	0.030 ppm Annual CAAQS					
Sulfur Dioxide (1 ppm = 2,620 µg/m ³)	0.05 ppm	0.07 ppm	0.25 ppm 1-hr CAAQS	0.25 ppm STEL	0.25 ppm	2 ppm TWA 5 ppm STEL	100 ppm	0.62 ppm odor threshold.
	0.05 ppm	0.057 ppm	0.075 ppm 1-hr NAAQS					
	0.01 ppm	0.01 ppm	0.04 ppm 24-hr CAAQS					
	0.00004 ppm	0.001 ppm	0.030 ppm Annual NAAQS					
PM ₁₀	96.3 µg/m ³	210.6 µg/m ³	50 µg/m ³ 24-hr CAAQS	3,000 µg/m ³	None (speciate into components)	5,000 µg/m ³	None	None
	96.3 µg/m ³	210.6 µg/m ³	150 µg/m ³ 24- hr NAAQS					

Chemical	Project only Off-site Receptor	Project plus Background at Off-site Receptor	AAQS	ACGIH (TWA)	OEHHA (REL)	CalOSHA	IDLH	Other
	2.6 µg/m ³	34.9 µg/m ³	20 µg/m ³ (ann., CA)		)			
PM _{2.5}	48.5 µg/m ³	126.3 µg/m ³	35 µg/m ³ 24-hr NAAQS	3,000 µg/m ³	None (speciate into components)	5,000 µg/m ³	None	None
	0.6 µg/m ³	16.0 µg/m ³	12 µg/m ³ Annual CAAQS					
	0.6 µg/m ³	16.0 µg/m ³	15 µg/m ³ Annual NAAQS					
Ozone (1 ppm = 1,960 µg/m ³)	Not Determined (see regional pollutant discussion)	Not Determined (see regional pollutant discussion)	0.090 ppm (1- hr) 0.070 ppm (8- hr)	0.05 ppm (heavy work) 0.08 ppm (moderate work) 0.10 ppm (light work) 0.20 ppm (any workload < 2 hours)	0.09 ppm (decrease in pulmonary function including a 10% decrease in FEV ₁)	0.1 ppm TWA 0.3 ppm STEL	5 ppm	0.6 ppm (1- hour) results in “acutely incapacitating symptoms will be experienced by significant portions of the population” (US EPA, 1975).

Notes: ACGIH is American Conference of Governmental Industrial Hygienists. ACGIH Threshold Limit Values (TLVs) are recommendations that are frequently reviewed and commonly used in industrial hygiene instead of federal permissible exposure limits (PELs) which are difficult to change and thus may not represent current scientific thought.

TWA – The TWA concentration for a conventional 8-hour workday and 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed, day after day, for a working lifetime without adverse effect.

STEL – A 15-minute TWA exposure that should not be exceeded at any time during a workday, even if the 8-hour TWA is within the respective limit. The STEL is the concentration to which it is believed that workers can be exposed continuously for a short period of time without suffering from 1) irritation, 2) chronic or irreversible tissue damage, 3) dose-rate-dependent toxic effects, or 4) narcosis of sufficient degree to increase the likelihood of accidental injury, impaired self-rescue, or materially reduced work efficiency.

IDLH means “An atmospheric concentration of any toxic, corrosive or asphyxiant substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere.” [29 CFR 1910.120]

Nitrogen Dioxide

Table 3.3-22 shows the worst case impacts due to NO₂ at the maximum exposed off-site sensitive receptor. In order to put the impact into perspective, the table compares both the Project Impacts and the combined Project Impacts with background to ambient air standards (CAAQS and NAAQS) as well worker safety standards. The background concentrations were either provided by SVAPCD or based on the maximum background concentration during a three year average.

NO₂ 1-Hour Averaging Period: The modeled Project for the 1- hour averaging period concentrations at the maximum exposed off-site receptor is less than both the California and Federal ambient air standards (CAAQS and NAAQS). However, when the Project emissions are added to the background for the 1-hour averaging period the impact is slightly above the CAAQS (0.22 ppm vs 0.18) and the NAAQS (0.11 ppm vs 0.10 ppm). The combined Project and background concentration is less than the CalOSHA safety standard of 1.0 ppm, slightly above the more conservative ACGIH REL standard of 0.20 ppm, and substantially less than the IDLH of 20 ppm. It is important to note the maximum concentrations of NO₂ would only occur during the 2015 operating scenario, not over the life of the Project.

NO₂ Annual Averaging Period: The modeled Project only (0.001 ppm) and the combined Project and background concentrations (0.010 ppm) for the NO₂ annual averaging period at the maximum exposed off-site sensitive receptor is less than the CAAQS (0.030 ppm). The NAAQS is 0.053 ppm which is less stringent than the CAAQS..

Nitrogen Dioxide Significance Summary: Based on the comparison of the worst case off-site concentrations of NO₂, the maximum exposed off-site receptor would experience no to mild adverse health effects as a result of the Project. Those receptors sensitive enough to be effected would experience mild symptoms, which is described by OEHHA as an effect which would be associated with mild subjective complaints with few to no objective findings. The concentrations are also less than the worker safety thresholds indicating that the concentration should be safe for daily repeated exposure of workers. The off-site ambient concentrations of NO₂ are less than 25% above the health standards used in this evaluation and would not be considered to be substantial concentrations. It is therefore considered that impacts associated with health effects related to NO₂ would be less than significant.

Sulfur Dioxide

The SO₂ modeled concentrations at the maximum exposed off-site receptor for the Project and the Project plus Background are below all ambient air standards. Therefore it is determined that there would be no health effects as a result of the Project SO₂. The Project would not result in substantial off-site concentrations of SO₂ at the and it is the impacts associated with SO₂ would be less than significant.

Particulate Matter

The health effects of particulate matter (PM) depends upon the size and composition of the particulates; therefore, the AAQS and health standards distinguish between PM₁₀ and PM_{2.5}. Although the Project worst case off-site maximum PM concentrations were much less than the identified worker safety health standards in Table 3.3-22, the Project plus background concentrations of both PM₁₀ and PM_{2.5} exceed the AAQS. Since the AAQS identify the concentration levels where there will be no health effects, even to sensitive receptors (“no impact” threshold), to further evaluate the potential health effects and significance impacts associated with Project PM emissions, a health risk assessment approach that considers the type of particles was used in this analysis. This is discussed below under the Health Risk section of the evaluation.

Ozone

Ozone (O₃) (smog) is formed by photochemical reactions between oxides of nitrogen (NO_x) and volatile or reactive organic compounds or gases (VOC or ROG), rather than being directly emitted by an emission source. Therefore, ozone is typically modeled on a regional basis, not on a project specific level. In order to determine the possible effect of Project emissions on ozone concentrations and public health, the mass of emissions from the Project is compared to the mass of emissions in the County and SJVAB as shown in Table 3.3-18.

As discussed in Section 3.3.2, the SJVAPCD has prioritized NO_x over VOCs in the strategy to reduce ozone concentrations because SJVAB is a NO_x-limited area, and additional VOC emission reductions will not advance the District's attainment of ozone standard. This analysis uses relative amount of Project NO_x emissions to the SJVAB NO_x emissions in order to estimate the Project's effect on ozone concentration and does not account for VOC emissions because they have less effect on the ozone concentration.

On the peak day, the Project would represent less than six hundredths of one percent (i.e., less than 0.06%) of NO_x emissions within the SJVAB and on the average day would represent approximately one-third of that amount (i.e., 0.022%). Thus, the Project contribution to the concentrations of ozone, associated health effects, and number of days exceeding the AAQS would not be substantial and is considered less than significant.

Health Risk

As discussed above, the concentrations of PM at off-site receptors would be above the AAQS. Therefore further analysis was conducted to evaluate the potential health effects associated with estimated PM emissions from the Project. Due to the complexity of the human body and toxicological studies that describe pollutant health effects, OEHHA and CARB have worked together to develop health risk assessment guidelines, a list of toxic air contaminants (TACs) and software that performs multi-pathway health risk assessment. In order to evaluate the potential acute health risks associated with PM emissions, the emissions must be speciated into components.

The majority of the PM₁₀ emissions associated with the Project are generated from the unpaved roads at the Project site. Therefore the speciation of PM₁₀ emissions for the Project was done using PM Profile 471, which is a model for unpaved roads. Furthermore, fugitive dust from paved roads speciated in PM Profile 470 (paved roads) generally shows lower amounts of toxic pollutants than from unpaved roads in PM Profile 471. Thus, by using the unpaved road speciation to describe both unpaved and paved road emissions the levels of toxic air contaminants are conservatively high. Health risk associated with particulates from diesel-fueled engines was assessed in the HRA. The acute health risk from the constituents of fugitive dust presented in Table 3.3-23.

Table 3.3-23. Localized Concentration and Acute Health Risk for Components of Fugitive Dust with OEHHHA/ARB Approved Health Values

	Fraction of PM ₁₀ (by weight)	Background (µg/m ³)	Cumulative (µg/m ³)	Project (µg/m ³)	Background (H.I.)	Cumulative (H.I.)	Project (H.I.)
arsenic	0.000015	0.0017	0.0032	0.0014	0.0086	0.0158	0.0072
cadmium	0.000013	0.0015	0.0027	0.0013	-	-	-
chromium	0.000017	0.0019	0.0036	0.0016	-	-	-
copper	0.000158	0.0181	0.0333	0.0152	0.0002	0.0003	0.0002
chlorine	0.000844	0.0965	0.1777	0.0813	0.0005	0.0008	0.0004
lead	0.00013	0.0149	0.0274	0.0125	-	-	-
manganese	0.000915	0.1046	0.1927	0.0881	-	-	-
nickel	0.000037	0.0042	0.0078	0.0036	0.0211	0.0390	0.0178
mercury	0.000014	0.0016	0.0029	0.0013	0.0027	0.0049	0.0022
selenium	0.000003	0.0003	0.0006	0.0003	-	-	-
vanadium	0.000077	0.0088	0.0162	0.0074	0.0003	0.0005	0.0002
Silica, Crystln	0.04	4.572	8.424	3.852	-	-	-
CrIV	0.00000085	0.00010	0.00018	0.000082	-	-	-
TOTAL				Total	0.0333	0.0614	0.0281

The acute HI determined for the total TAC concentrations present in the Project particulate matter is 0.028, which is significantly below the regulatory threshold of 1.0.

Table 3.3-24 presents the annual localized concentrations of PM constituents and related chronic, non-cancer health hazard index. The above discussion regarding development of acute RELs also applies to chronic REL (e.g., they are designed to protect the most sensitive individuals in the population). Table 3.3-25 presents the lifetime excess cancer risk per 1,000,000 people exposed based on the annual concentrations presented in Table 3.3-24. Cancer potency factors (CPF) are developed by OEHHHA based upon similar methods as those used for non-cancer risks except that cancer is the endpoint evaluated as opposed to non-cancer effects.

Table 3.3-24. Localized Concentration and Chronic Non-Cancer Health Risk for Components of Fugitive Dust with OEHHA/ARB Approved Health Values

	Fraction of PM ₁₀ (by weight)	Background (µg/m ³)	Cumulative (µg/m ³)	Project (µg/m ³)	Background (H.I.)	Cumulative (H.I.)	Project (H.I.)
arsenic	0.000015	0.00048	0.00052	0.000039	0.0323	0.0349	0.0026
cadmium	0.000013	0.00042	0.00045	0.000034	0.0210	0.0227	0.0017
chromium	0.000017	0.00055	0.00059	0.000044	-	-	-
copper	0.00016	0.0051	0.0055	0.00041	-	-	-
chlorine	0.00084	0.027	0.029	0.0022	0.1363	0.1473	0.0110
lead	0.00013	0.0042	0.0045	0.00034	-	-	-
manganese	0.00092	0.030	0.032	0.0024	0.3284	0.3548	0.0264
nickel	0.000037	0.0012	0.0013	0.000096	0.0854	0.0922	0.0069
mercury	0.000014	0.00045	0.00049	0.000036	0.0151	0.0163	0.0012
selenium	0.0000030	0.00010	0.00010	0.0000078	0.0000	0.0000	0.0000
vanadium	0.000077	0.0025	0.0027	0.00020	-	-	-
Silica, Crystln	0.040	1.3	1.4	0.10	0.4307	0.4653	0.0347
CrIV	0.00000085	0.000027	0.000030	0.0000022	0.0001	0.0001	0.0000
Criteria Subtotal					1.0492	1.1337	0.0845
TAC Subtotal					ND	ND	0.3600
Total					ND	ND	0.4445

Note: Annual PM₁₀ concentrations used: 32.3 µg/m³ background and 34.9 µg/m³ cumulative at highest receptor. Using background hazard index and concentration a factor of 0.0325 H.I. per µg/m³ is determined.

Table 3.3-25. Localized Cancer Health Risk for Components of Fugitive Dust with OEHHA/ARB Approved Health Values

	Background (per million)	Cumulative (per million)	Project (per million)
arsenic	1.60	1.73	0.13
cadmium	1.81	1.95	0.15
chromium	-	-	-
copper	-	-	-
chlorine	-	-	-
lead	0.05	0.05	0.00
manganese	-	-	-
nickel	0.31	0.34	0.03
mercury	-	-	-
selenium	-	-	-
vanadium (fume or dust)	-	-	-
Silica, Crystln	-	-	-
CrIV	4.12	4.45	0.33
Criteria Subtotal	7.88	8.52	0.63
TAC Subtotal	ND	ND	6.30
Total	ND	ND	6.93

Note: Annual PM₁₀ concentrations used: 32.3 µg/m³ background and 34.9 µg/m³ cumulative at highest receptor. Using background cancer risk and concentration a factor of 0.244 excess cancer risk per µg/m³ is determined.

As shown in Table 3.3-24 and Table 3.3-25, inclusion of the toxic constituents of the criteria pollutant particulate matter (i.e., fugitive dust) in the chronic non-cancer and cancer health risk assessments reveals that the health hazard and risk of cancer increase slightly and remain less than the CEQA significance thresholds.

Although the off-site concentrations of PM are above the AAQS, the more refined evaluation of potential health effects demonstrated that the health effects at these concentrations are less than CEQA significance levels for toxic air contaminants. Health effects associated with the non-toxic constituents of the PM were also considered. Because the AAQS were developed primarily for urban PM and not for the inert crustal nature of PM generated from unpaved roads in rural areas, the Project off-site PM were compared to the ACGIH TWA and CalOSHA worker safety PM standards of 3,000 $\mu\text{g}/\text{m}^3$ and 5,000 $\mu\text{g}/\text{m}^3$, respectively. These standards were developed for exposure to crustal inert particulate matter (vs the toxic constituents that could be present in urban PM). The ACGIH threshold is a conservative threshold based on current scientific thought for repeated exposures 8 hours a day, day after day for a working lifetime without adverse effect. These thresholds are not for sensitive receptors but given the substantial difference between the worst case Project plus background PM concentration to these daily lifetime exposure levels (i.e., $\text{PM}_{2.5}$ at 126.3 $\mu\text{g}/\text{m}^3$ vs 3,000 $\mu\text{g}/\text{m}^3$), it is reasonable that an exposure to this concentration would not result in a significant health effect even for a sensitive receptor.

In addition, because of the extremely conservative assumptions used in the emission calculations and modeling of off-site concentrations, the probability that the maximum concentration would occur while a resident is outside in an exposed environment is small. If these conditions were to happen, the health effect could be more severe (see Table 1 of Sespe June 2014 Memorandum located in Appendix D of this DEIR), such as shortness in breath, wheezing, and/or headache but not irreversible. Therefore, the impact associated with the off-site PM concentrations is considered less than significant.

Level of Significance before Mitigation

Less Than Significant.

Mitigation Measures

Not applicable. Mitigation measures are not required because the potential impact associated with concentrations of toxic and criteria pollutants at off-site receptors is less than significant.

Level of Significance After Mitigation

Not applicable. The Project impact is less than the level of significance without mitigation.

3.3.6.5 Odor

Impact Statement

Impact AQ-5: Would the Project create objectionable odors affecting a substantial number of people? (CEQA Guidelines Threshold Criteria (e); Additional Threshold (4))

Impact Analysis

Diesel exhaust from mobile equipment/vehicles and air emissions from the asphalt plant associated with the Project would contain quantities of odorous substances. The asphalt plant would incorporate modern technology designed to reduce odorous emissions, including recirculation of exhaust into the burner combustion zone to reduce concentrations of odorous organic compounds.

Odor concentrations (dilutions to threshold) would decrease rapidly with distance, and are not expected to be frequently (or at all) detectable at locations outside of the Project site boundary. In addition, given the subjective nature of odors, such odors are generally only considered to be objectionable by residential receptors (i.e., not by occupational workers). Given the rural nature of the Project site location, there are very few (less than ten) residences located within 1 mile of the location of the majority of the on-site emissions of diesel exhaust from mobile equipment/vehicles and the asphalt plant. Therefore, it is not anticipated that any objectionable odors affecting a substantial number of people could result from the Project.

In addition, the Project would operate under an operating permit issued by the SJVAPCD in compliance with all SJVAPCD rules and regulations. If a substantial number of odor complaints are received by the SJVAPCD, they would be addressed under the SJVAPCD nuisance rule (Rule 4102), which reads:

“A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property.”

Therefore, in the unlikely event that a significant number of odor complaints were documented as a result of the Project, they would be addressed by the SJVAPCD.

The SJVAPCD has project “screening trigger levels” for a list of various potential odor sources. The only Project-applicable facility that is identified by SJVAPCD as having a screening trigger level are asphalt batch plants having sensitive receptors within 1 mile (SJVAPCD, 2002). Because offensive odors rarely cause any physical harm and no requirements for their control are included in State or Federal air quality regulations, the SJVAPCD has no rules or standards related to odor emissions, other than its nuisance rule. The SJVAPCD GAMAQI provides that the determinations of significance should be based on the distance and frequency at which citizen odor complaints have occurred in the vicinity of a similar

facility (SJVAPCD, 2002). The GAMAQI indicates that, if sensitive receptors are located within 1 mile of an asphalt batch plant, significant odor impacts could occur at those receptors and a detailed analysis is warranted.

A residence is located within 1 mile of the processing plant, so the SJVAPCD GAMAQI presumes that significant odor impacts could occur at that residence. However, based on the County's experience with similar facilities, it is not likely that any odors emanating from the batch plant would cause a nuisance or rise to the level of a potentially significant odor source. The plant design is generally specifically engineered to significantly reduce odor emissions by recycling exhaust back through the combustion chamber, thereby oxidizing odorous compounds. This design would reduce any potential odor impacts to less than significant levels. Furthermore, odor impacts would not be significant because they would not affect a substantial number of people. Figure 3.3-3 illustrates the locations of potential receptors and the prevailing wind direction in relation to the Project Site.

The County conservatively concludes that the impact may be significant based solely on the presumption of a potentially significant impact in the SJVAPCD GAMAQI, and the following mitigation measure is recommended to further reduce any potential for odor impacts.

Level of Significance before Mitigations

Potentially Significant.

Mitigation Measures

The Project design incorporates features that control odor from the asphalt to the maximum extent feasible.

Mitigation Measure AQ-1:

The following design features will mitigate VOC, SVOC, and/or SO₂ emissions:

1. The type of asphaltic cement produced by on-site plants affects odorous emissions. Some cements have lower VOC/SVOC emissions than others. Therefore, cements with lower VOC/SVOC emissions will be used to the extent feasible.
2. Periodic burner tune-ups may reduce VOC emission by about 38 percent. Therefore, periodic burner tune-ups will be implemented.
3. Mixing drum vapors will be routed back to the dryer burner.

Level of Significance after Mitigations

The impact is less than significant after mitigation.

3.3.7 Cumulative Level Impacts and Mitigation Measures

As discussed in Section 3.3.6.2, construction activities were determined to a less than significant impact and therefore further evaluation of cumulative impacts during construction is unnecessary. The potential cumulative impacts associated with operation of the Project are discussed below.

Would the Project, when considered in conjunction with other cumulative projects, conflict with or obstruct implementation of an applicable air quality plan? (CEQA Guidelines Threshold Criteria (a)).

Regional cumulative impacts would be consistent with the applicable air quality plans because the cumulative of emissions from all of these existing and planned sources would be expected to increase in direct proportionality to population growth (CGS, 2012) provided that trip distances do not increase. With respect to trip distance, the Project makes aggregates resources available in an area closer to the market than other production facilities. Thus, the Project would result in no net impact on cumulative regional emissions as compared to the No Project Alternative.

Based upon the above discussion, Project impact on implementation of applicable air quality plants is less than cumulatively considerable.

Would the Project, when considered in conjunction with other cumulative projects, violate any air quality standard or contribute substantially to an existing or projected air quality violation? (CEQA Guidelines Threshold Criteria (b)).

Localized cumulative impacts would occur if overlapping plumes from one or several projects were to increase concentrations at nearby receptors above ambient air quality standards or health risk assessment thresholds. There are several mining facilities in the list of projects that are near the Project and two (Santa Fe Aggregates and Kings River Sand and Gravel) are adjacent to the Project. However, the acreage over which mining occurs (i.e. processing areas are greater than a mile from each other) and mining methods used are such that it is unlikely that plumes would commingle to create a hot spot. Lastly, the project level impact assessment presents the Project concentration plus the background concentrations. It is unlikely that the background concentration at the Project site, which is rural, is greater than the concentration at the monitoring stations which are located in populated areas that contain many sources of air emissions.

Short term concentrations of NO_x, SO_x, PM₁₀ and PM_{2.5} each exceed the applicable threshold when added to background or compared to the SIL (see Table 3.3-16). Thus, Project impact on short term concentrations of these pollutants is cumulatively considerable.

Long term concentrations of PM₁₀ and PM_{2.5} each exceed the applicable threshold when added to background or compared to the SIL (see Table 3.3-16). Thus, Project impact on long term concentrations of these pollutants is cumulatively considerable.

As discussed above, it is unlikely that emissions from the nearby projects would combine with Project emissions and result in a localized hot spot. Therefore, pollutant concentrations that do not rise to a level of significance when added to background or compared to the SIL would not be expected to be cumulatively considerable. The NO_x tons per year threshold is the amount that is cumulatively considerable. It is exceeded and therefore the Project impact on regional ozone is both significant and cumulatively considerable. ROG and PM₁₀ regional impacts are each less than cumulatively considerable.

Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (CEQA Guidelines Threshold Criteria (c)).

This impact is assessed in Section 3.6.6.3. The NO_x tons per year threshold is the amount that is cumulatively considerable. It is exceeded and therefore the Project impact on regional ozone is both significant and cumulatively considerable. ROG and PM₁₀ regional impacts are each less than cumulatively considerable.

Would the Project, when considered in conjunction with other cumulative projects, expose sensitive receptors to substantial pollutant concentrations? (CEQA Guidelines Threshold Criteria (d)).

As discussed above, there are several mining facilities in the list of related projects that are near the Project and two (Santa Fe Aggregates and Kings River Sand and Gravel) are adjacent to the Project. However, the acreage over which mining occurs (i.e. processing areas are greater than a mile from each other) and mining methods used are such that it is unlikely that plumes would come together to create a hot spot. Since exposure of sensitive receptors to substantial pollutant concentration is a localized assessment and not regional in nature, a cumulative impact is unlikely.

In addition, the health risk assessment thresholds that determine the Project impact already represent thresholds which are cumulatively considerable. Impact analysis in Section 3.6.6.4 shows that the Project would not result in significant impacts to sensitive populations, and those impacts are less than cumulatively considerable.

Therefore, the effect of the Project and the cumulative projects are not considered to be a significant cumulative impact of pollutants to sensitive receptors.

Would the Project, when considered in conjunction with other cumulative projects, create objectionable odors affecting a substantial number of people? (CEQA Guidelines Threshold Criteria (e)).

As discussed in Section 3.6.6.5 the Project is unlikely to emit odors affecting a substantial number of people, and the project odor impact is less than significant. However, the nearest receptor is within one-

mile from the asphalt plant. Therefore, the Project impact is considered less than cumulatively considerable.

3.3.8 Alternatives to Significant Effects

No Project Alternative

The No Project Alternative would avoid air quality impacts at nearby receivers resulting in no change from the existing physical setting other than from increased future traffic conditions and other projects that are unknown at this time. Regional emissions from transport of aggregates and related materials would be the same or greater for this alternative because some of the materials would travel longer distances to the market in Fresno.

Reduced Mining Production Alternative

Under the Reduced Mining Production Alternative, short term air quality impacts from on-site sources would not change from those described for the Project because the impacts are evaluated on a one-hour or daily basis and peak hour activity would not change from the Project. Long term air quality impacts, such as those with potential for inducing chronic health effects, would be reduced at nearby receptors and potentially increased at receptors near some alternate source of aggregates.

Reduced Project Size Alternative

Reducing the Project footprint would reduce air quality impacts a minor amount at receptors 1-11 where the Project boundary is moved away but would not avoid significant air quality impacts.

Reduced Mining Depth Alternative

Reducing the mining depth would not affect air quality impacts except that it would shorten the life of the Project, which would reduce the already less than significant cancer risks, would also reduce other multi-year impacts, and result in materials being hauled longer distances to the Fresno market sooner than would occur with the Project.

Different Phasing Alternative

Air quality characteristics of the Project stationary sources are not expected to change over time and those sources do not move. Vehicle engines would reduce emissions over time and the excavation does move so there may be ways to change the order of impacts by mining areas that are far from receptors early in the Project. Moreover, the majority of sources would not move. Therefore, re-phasing the Project would not have a significant effect on air quality impacts.

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3.4 BIOLOGICAL RESOURCES

3.4.1 Introduction

3.4.1.1 Purpose of Analysis

This section of the DEIR describes the biological resources present on-site and in the immediate vicinity of the Project site and the impacts of the Project on such resources. A Biological Study Area (BSA) was identified which includes both the Project site and property boundary. The BSA is shown on Figure 3.4-1.

3.4.1.2 Sources Used in Analysis

Analysis in this section is based on the findings in the Biological Resources Evaluation (BRE) (Buada Associates, John Stebbins, LSA Associates, 2013), Addendum to the BRE (LSA, January, 2014); Addendum # 2 to the BRE (LSA, April, 2014); (Appendix E) and associated field work and surveys (Section 3.4.5).

3.4.2 Environmental Setting

3.4.2.1 Regional Setting

The Project site is located within unincorporated Fresno County in the easterly portion of the San Joaquin Valley. The City of Reedley is located approximately 5.75 miles to the southeast, and the City of Sanger is located approximately 1.5 miles to the northwest. Non-urban land use in this region is characterized by agricultural which can provide foraging opportunities for a variety of species.

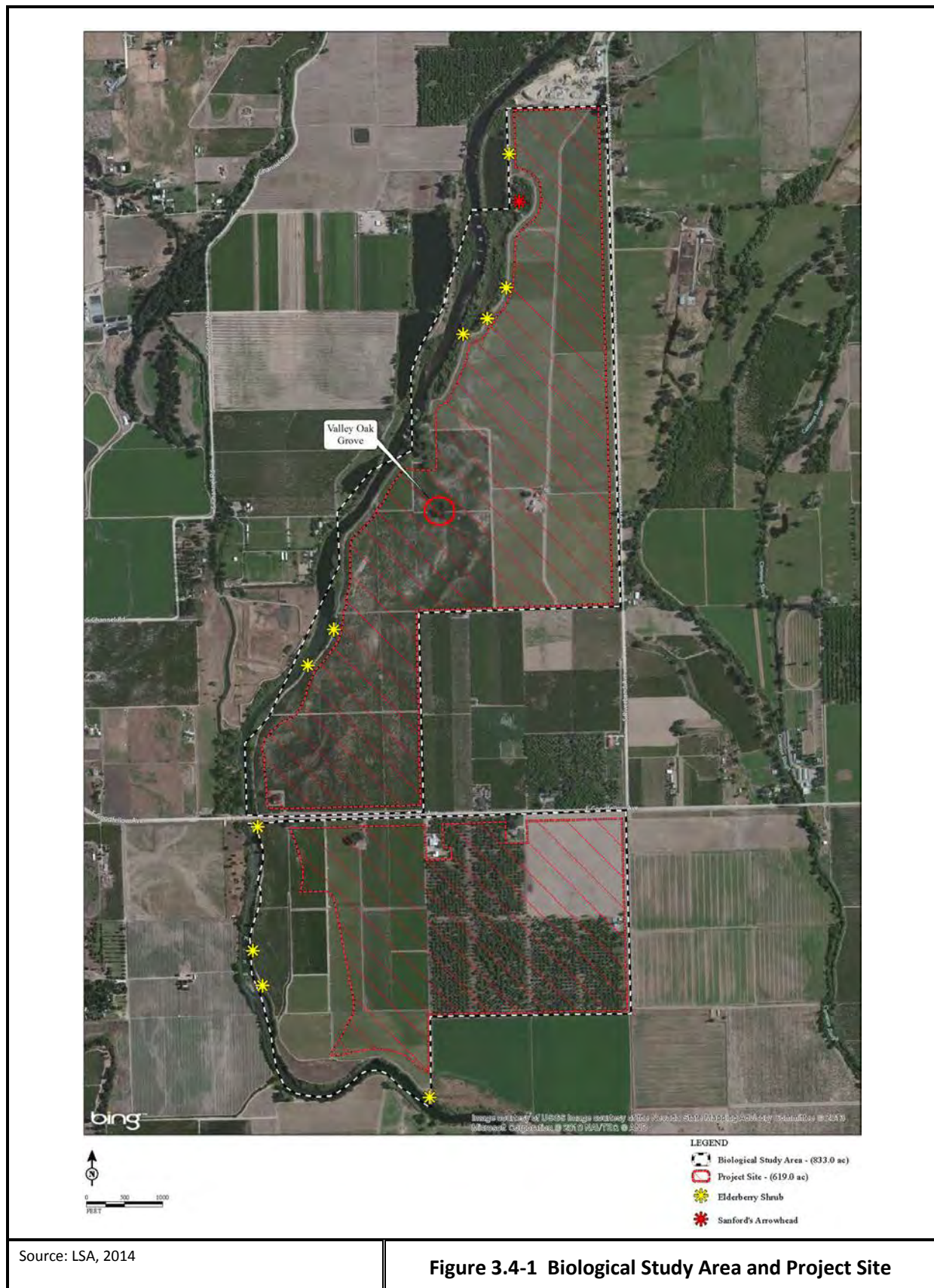
3.4.2.2 Vicinity Setting

Surrounding land use in the immediate Project site vicinity includes past mining operations and an active aggregate mining operation with a ready-mix concrete plant to the north and an aggregate mining operation, approved to include a ready-mix concrete plant, to the east and southeast. Irrigated cropland with scattered farm residences is located to the east and across the Kings River to the west and south. Stone fruit orchards with several farm residences are located on the northwest corner of Goodfellow Avenue and Riverbend Avenue between the northern and southern parts of the Project site.

3.4.2.3 Project Site Setting

The Project site is primarily flat and is dominated by grape vineyards, an olive orchard, and a walnut orchard. The Hanke Ditch is piped and runs through the eastern portion of the Project site north of Goodfellow Avenue and is an open ditch along the east side of the Project site south of Goodfellow Avenue. The western edge of the Project site is bordered by riparian vegetation along the Kings River and two small former gravel excavation ponds to the northwest.

The majority of the riparian habitat on the Project site is located adjacent to active vineyards and orchards, and is separated from these activities by the farm access road (approximately 10-foot wide). Consequently, farming vehicles/trucks/trackers currently drive directly adjacent to the riparian zone, and normal farming activities such as plowing, pruning, weed abatement (i.e., herbicide spraying), fertilizer application, irrigation, and harvesting currently occur within approximately 10 feet of the riparian habitat.



Vegetation Communities

Vegetation communities found on the Project site are listed in Table 3.4-1 and mapped in Figure 3.4-2. Each of the communities is further described below.

Table 3.4-1 Vegetation Communities in the BSA

Vegetation Community/Habitat	Acreage
Agricultural	762.0
Great Valley Mixed Riparian Forest	40.5
Riverine	20.3
Ruderal	9.6
Open Water	0.6
Total	833.0

Agriculture

Vineyards and orchards are the predominant land uses in the BSA, comprising a total of 762 acres. Approximately 491.4 acres are vineyards and the remaining 270.6 are olive and walnut orchards. North of Goodfellow Avenue, land use is generally split evenly between vineyards and orchards. South of Goodfellow Avenue, vineyards dominate the BSA with only a small area of orchard in the southeast corner.

Included in the vineyard and orchard designations are dirt roads and scattered farmhouses or agricultural buildings. In general, these agricultural areas have been intensively farmed for decades and no natural habitat remains. There is, however, a small grove of mature Valley oaks (*Quercus lobata*) within one of the olive orchards north of Goodfellow Avenue.

Great Valley Mixed Riparian Forest

The riparian vegetation present along the banks of the Kings River within the BSA is classified as Great Valley Mixed Riparian Forest. This area totals 40.5 acres. This plant community forms a narrow, almost solid band of vegetation along the eastern edge of the Kings River and along the western edge of the BSA. Native trees and shrubs found in this habitat include valley oak, cottonwood (*Populus fremontii*), buttonwillow (*Cephalanthus occidentalis*), Oregon ash (*Fraxinus latifolia*), elderberry (*Sambucus nigra caerulea*), and several species of willow (*Salix* spp.). In addition, the riparian habitat supports several large western sycamores (*Platanus racemosa*). Non-native trees are also present, including fruitless mulberry (*Morus alba*), catalpa (*Catalpa speciosa*), and silver maple (*Acer saccharinum*). Native understory plants include mugwort (*Artemisia douglasiana*), stinging nettle (*Urtica dioica*), Baltic rush (*Juncus balticus*), virgin's bower (*Clematis ligusticifolia*), horsetail (*Equisetum arvensis*), and goldenrod (*Solidago elongata*). Non-native understory species include Castor bean (*Ricinus communis*), honeysuckle (*Lonicera japonica*), Virginia creeper (*Parthenocissus vitacea*), Himalaya berry (*Rubus armeniacus*), periwinkle (*Vinca major*), and English ivy (*Hedera helix*).

Near the north end of the BSA, a narrow band of wetland habitat occurs at the outer (east) edge of the Great Valley Mixed Riparian Forest community. These wetlands are remnants of abandoned gravel ponds used during past mining activities. Two perennial ponded areas still persist, one each at the north and south ends of the wetland area. These wetlands support riparian and emergent marsh vegetation such as Baltic rush, cattail (*Typha angustifolia*), dallisgrass (*Paspalum dilatatum*), pondweed (*Potamogeton nodosus*), cocklebur (*Xanthium strumarium*), and sour dock (*Rumex crispus*). The northern ponded area also supports Sanford's arrowhead (*Sagittaria sanfordii*), a special-status species, as shown in Figure 3.4-1.

There are two areas within the mixed riparian forest community, one on either side of the river but not within the Project site boundary, where the understory has been removed but many of the trees remain, resulting in a park-like setting. Approximately 5 acres of this open riparian vegetation are on the east bank adjacent to the Project site.

Riverine

The riverine community in the BSA, totaling 20.3 acres, consists of the active channel of the Kings River located west of the Project site boundary. The active channel consists primarily of open water, but occasional gravel bars, either unvegetated or with scattered vegetation, also occur.

Ruderal

Two areas of ruderal vegetation, totaling approximately 9.6 acres, are located in the BSA. One is located on the west bank of the Kings River north of Goodfellow Avenue; the other is located at the southern end of the BSA adjacent to the Kings River. The ruderal communities were vegetated with a mix of common weedy species on the upper banks and Himalaya berry along the water's edge.

Open Water

The open water community, totaling 0.6 acres, consists of a portion of an artificial pond on the west bank of the Kings River.

Wildlife Use

Since more than 90 percent of the BSA is active vineyards and orchards, wildlife use of the BSA is relatively low. In addition to the absence of natural habitats in the agricultural lands, regular farming activities such as disking, spraying, and pruning further limit wildlife use of the BSA. However, a variety of species are known to occur in disturbed and agricultural settings. In addition, the small grove of mature valley oaks in the olive orchard may provide nesting habitat for several bird species. Common wildlife species that were observed or may occur in agricultural areas include, but are not limited to, coyote (*Canis latrans*), California ground squirrel (*Spermophilus beechyi*), common kingsnake (*Lampropeltis getula*), red-tailed hawk (*Buteo jamaicensis*), rock dove (*Columba livia*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), northern mockingbird (*Mimus*

polyglottos), European starling (*Sturnus vulgaris*), American robin (*Turdus migratorius*), and mourning dove (*Zenaida macroura*).

The mixed riparian forest and riverine communities associated with the Kings River provide the only quality wildlife habitat in the BSA. However, the narrow width and predominance of agricultural land uses in the adjacent areas decreases the overall habitat value of the riparian corridor. Still, these habitats provide movement and cover for a variety of mammals, amphibians, reptiles, and suitable nesting habitat for birds. The Kings River also provides habitat for fish. Wildlife species that were observed or may occur in the mixed riparian forest and riverine habitats include, but are not limited to, mammals such as coyote, bats, raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), bobcat (*Lynx rufus*), and mule deer (*Odocoileus hemionus*); amphibians and reptiles such as Pacific tree frog (*Hyla regilla*), bullfrog (*Rana catesbeiana*), Pacific pond turtle (*Emys marmorata*), western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*), and western terrestrial garter snake (*Thamnophis elegans*); birds such as eared grebe (*Podiceps nigricollis*), great egret (*Ardea alba*), wood duck (*Aix sponsa*), common merganser (*Mergus merganser*), common moorhen (*Gallinula chloropus*), black phoebe (*Sayornis nigricans*), yellow warbler (*Dendroica petechia*), common yellowthroat (*Geothlypis trichas*), Cooper's hawk (*Accipiter cooperi*), red-tailed hawk, and osprey (*Pandion haliaetus*); and fish such as rainbow trout (*Oncorhynchus mykiss*), catfish (*Ictalurus* spp.), and common carp (*Cyprinus carpio*).

A comprehensive list of wildlife species observed within the BSA is included in the BRE (Appendix E).

Wildlife Movement

The importance of continuous habitat corridors and the effects of habitat fragmentation on wildlife populations have been studied extensively and are well understood. Land development and linear structures (e.g., roadways) convert large habitat blocks into noncontiguous patches separated by barriers; individual animals and entire populations may become isolated in remnant habitat "fragments." Depending on their size and other characteristics, these fragments may not support viable populations of some animals.

Wildlife movement corridors are linear habitats that function to connect two or more areas of significant wildlife habitat. These corridors may function on a local level as links between small habitat patches (e.g., streams in urban settings) or may provide critical connections between regionally significant habitats (e.g., coyote movement corridors). Wildlife corridors typically include vegetation and topography that facilitate the movements of wild animals from one area of suitable habitat to another in order to fulfill foraging, breeding, and territorial needs. These corridors often provide cover and protection from predators that may be lacking in surrounding habitats. Wildlife corridors generally include riparian zones and similar linear expanses of contiguous habitat.

The majority of the riparian habitat found within the BSA is part of the Kings River wildlife movement corridor. This wildlife corridor extends many miles from Pine Flat Dam located north of the BSA and continues for many miles to the south of the BSA and is considered important on a regional basis.

Aquatic Resources

Aquatic resources occurring in the BSA are primarily limited to the Kings River. The headwaters of the Kings River are approximately 45 miles northeast of the BSA in the Sierra Nevadas. The river flows westerly from the headwaters into Pine Flat Reservoir, located approximately 15 miles upstream of the BSA. The lower Kings River watershed has been extensively modified since free flow of the Kings River was eliminated in the early 1950's with the construction of Pine Flat Dam, resulting in changes to the downstream reaches of the river. Downstream of the BSA, the river flows generally southwest until crossing SR-99 where it divides into distributaries; the northern distributaries flow into the San Joaquin River while the southern distributaries flow into the Tule Lake basin.

Within the BSA, the Kings River is mostly riffles and glides with a channel width varying from approximately 150 to 175 feet wide. As described above, a narrow riparian corridor is present along much of both banks. A narrow wetland area occurs adjacent to the east bank of the river in the north portion of the BSA. As described above, the wetland area originated from abandoned mining ponds and supports two permanently ponded areas.

The only other aquatic feature in the BSA is the Hanke Ditch. The Hanke Ditch is an artificial irrigation ditch that was constructed to convey flows from the Kings River to agricultural uses. The Hanke Ditch is earthen, approximately 12 feet wide, and mostly unvegetated. The Hanke Ditch collects water from the Kings River approximately 1.25 miles northeast of the BSA. The ditch enters the BSA at the northeast corner, where it runs underground, and then flows directly south until approximately 1,700 feet north of Goodfellow Avenue where it again becomes an open ditch. It then crosses Goodfellow Avenue and continues to flow south out of the BSA before discharging back into the Kings River.

Special-Status Species

Table 3.4-2 provides a list of special-status species that could potentially occur in the BSA; this list was compiled based on literature reviews, as described in Section 3.4.5.

During preparation of the BRE, a comparison was conducted of the specific habitats required by each species listed in Table 3.4-2 and the habitats and habitat conditions present in the BSA. Based on this evaluation, species were assigned a "potential for occurrence" in the BSA as identified in the table. Special-status species that were observed, or determined to potentially occur in the BSA based on availability of suitable habitat, are discussed more fully below. Species determined unlikely to occur (with a potential for occurrence of "absent") in the BSA based on these same factors are documented in Table 4 of the BRE (Appendix E), and are not included in the table below.

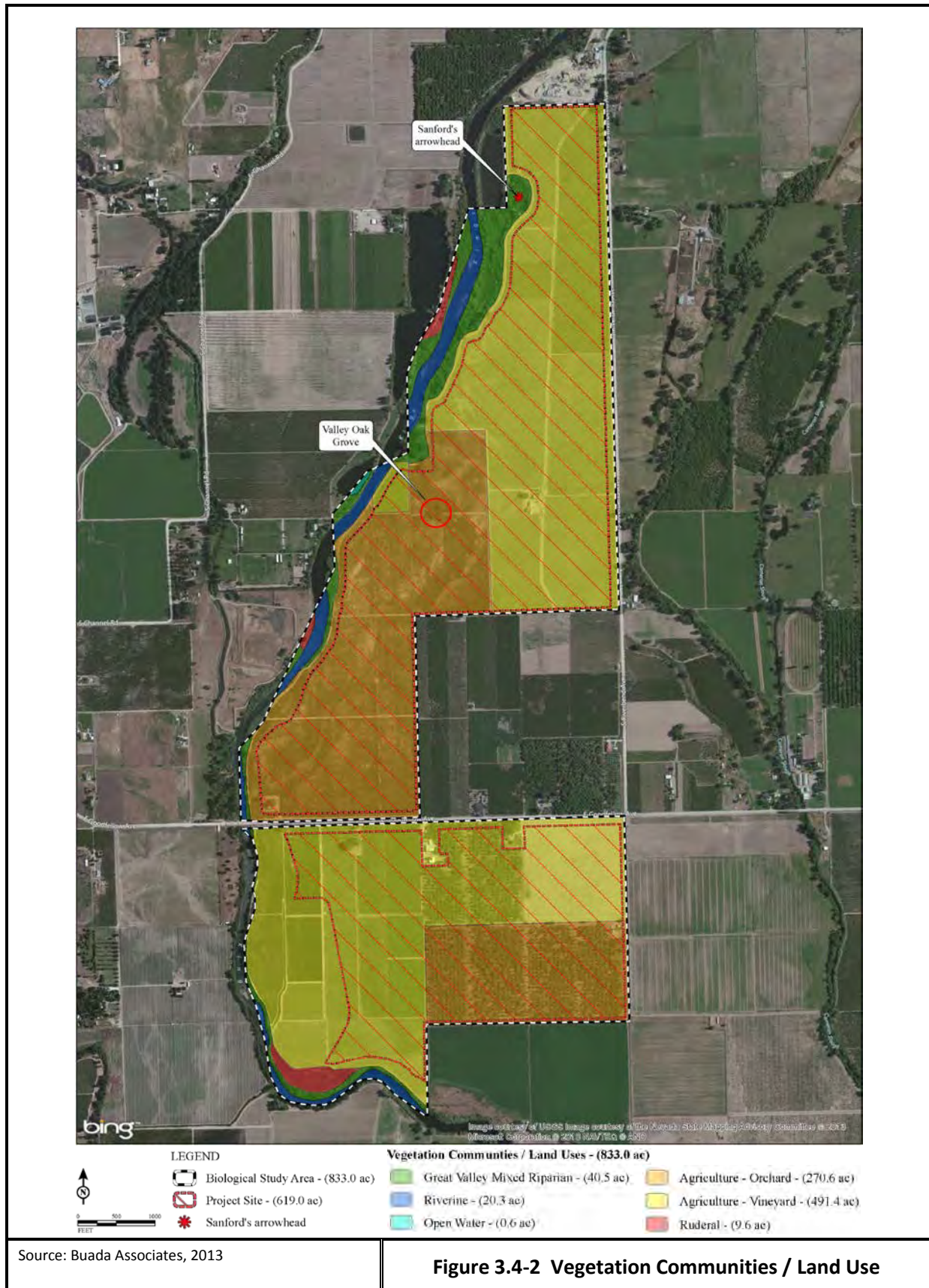


Figure 3.4-2 Vegetation Communities / Land Use

Table 3.4-2 Special Status Species Potentially Occurring Within the Biological Study Area

Scientific Name	Common Name	Status	Habitat Requirements	Potential for Occurrence	Comments
Mammals					
<i>Antrozous pallidus</i>	Pallid bat	CA CSC	Occurs in grassland, shrublands, woodlands, and forests. Requires rocky outcrops, cliffs, and crevices with access to open habitats for foraging.	Low	Could potentially forage over the agricultural fields in the BSA but no suitable roosting habitat is present.
<i>Lasiurus cinereus</i>	hoary bat	None	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Moderate	Could forage over the agricultural fields and potentially nest in trees along the Kings River.
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE, ST	Inhabits annual grasslands or grassy open stages with scattered shrubby vegetation. Requires loose textured sandy soils for burrowing	Low	No suitable habitat occurs in the BSA and no dens or signs of presence were observed. The BSA is located well east of the current range of this species. Since this species can travel long distances, there is a low probably it could occur in the BSA.
Birds					
<i>Agelaius tricolor</i>	Tricolored blackbird	CSC	Highly colonial species. Nests in freshwater marshes with tules or cattails, or in other dense vegetation such as thistle, blackberry thickets, etc. in close proximity to open water. Forages in a variety of habitats including pastures, agricultural fields, rice fields, and feedlots, within 2 mi of nesting area.	Low	The marsh vegetation in the wetland areas along the Kings River could potentially support a small nesting colony. Potential foraging habitat in the adjacent agricultural areas is suboptimal.

Scientific Name	Common Name	Status	Habitat Requirements	Potential for Occurrence	Comments
<i>Buteo swainsoni</i>	Swainson's hawk	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas and oak savannahs. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Low	There is no suitable foraging habitat for this species on the Project site since the lands are either cultivated with orchards and vineyards or support riparian vegetation, and the majority of lands surrounding the property area are in similar agriculture production. However, the riparian vegetation along the Kings River provides suitable nesting habitat for Swainson's hawk, although it is unlikely this species would nest in the vicinity due to the lack of suitable foraging habitat.
Reptiles					
<i>Emys marmorata</i>	Pacific pond turtle	CSC	Occurs in permanent or nearly permanent water sources, ponds, marshes, rivers, streams and irrigation ditches with emergent vegetation and basking sites. Lay eggs in upland habitat consisting of sandy banks or grassy, open fields.	Moderate	The reach of the Kings River and associated ponded wetland areas within the BSA provide suitable habitat for this species.
Invertebrates					
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT	Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus mexicana</i>). Prefers branches greater than 1 in (2.5 cm) in diameter.	High	There are ten CNDDDB records for this species within an approximately 6-mile radius of the BSA; six of the records are within 1 mile of the BSA, to the west and north along the Kings River and two tributaries. Elderberry shrubs were observed and mapped within the riparian corridor along the Kings River within the BSA, but focused surveys were not conducted. All of the riparian corridor is planned for preservation.
Plants					
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	CNPS 1B	Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches.	Present	This species was observed in one location near the north end of the BSA in a wetland area along the Kings River that is planned for preservation

Status Codes

Federal**FE:** Federally listed; Endangered**FT:** Federally listed, Threatened**FPE:** Federally Proposed for Listing as Endangered elsewhere in their range.**FPT:** Federally Proposed for Listing as Threatened**FC:** Federal Candidate**NMFS SC:** National Marine Fisheries Service Species of Concern**State****ST:** State listed; Threatened**SE:** State listed; Endangered**SFP:** State Fully Protected**SC:** State Candidate**SWL:** State Watch List**CSC:** California Species of Special Concern**CA SA:** Special Animal: General term that refers to taxa that the CNDDDB is interested in tracking regardless of legal or protection status:

Includes the following categories in addition to those listed above:

- Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act Guidelines.
- Taxa that are biologically rare, very restricted in distribution, declining throughout their range, or have a critical, vulnerable stage in their life cycle that warrants monitoring.
- Populations in California that may be on the periphery of a taxon's range, but are threatened with extirpation in California.
- Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands, vernal pools, etc.)

Taxa designated as a special status, sensitive, or declining species by other state or Federal agencies, or non-governmental organization (NGO).

California Native Plant Society (CNPS) designations**List 1A:** Plants presumed extinct in California.**List 1B:** Plants rare and endangered in California and throughout their range.**List 2:** Plants rare, threatened or endangered in California but more common**Mammals*****Bats***

One bat species listed as a California Species of Special Concern (pallid bat) and one bat species with no formal status but included in the California Natural Diversity Database (CNDDDB) records (hoary bat) have potential to occur in the BSA. Neither the pallid nor hoary bat is listed as threatened or endangered under Federal or state law.

Bats likely forage over the agricultural lands and other communities in the BSA, and mature trees within the mixed riparian forest and the valley oaks in the olive orchard provide potential roost sites within hollows or under exfoliating bark. In addition, farm houses or other buildings could support roosting bats. Based on this information, there is moderate potential for bats to occur in the BSA.

San Joaquin Kit Fox

The San Joaquin kit fox, a Federally-listed endangered species and a State-listed threatened species, inhabits annual grasslands or grassy open stages with scattered scrubby vegetation. The historical distribution of this species extended from southern Kern County north to Contra Costa County and east to Stanislaus County.

The current distribution of the San Joaquin kit fox in Fresno County is generally considered to be west of SR-99 about 20 miles southwest of the Project site, and includes the San Joaquin Valley floor and foothill areas to the west of the Valley floor.

None of the communities in the BSA provide suitable habitat for San Joaquin kit fox, and no dens or other potential denning areas (e.g., debris piles) were observed in the BSA during Project site surveys. Similarly, there is no suitable natural habitat for San Joaquin kit fox in the vicinity of the BSA, making it unlikely that this species would migrate through the BSA. Known predators of San Joaquin kit fox, including coyote (adults and pups), great horned owls, and red-tailed hawks, were all observed in the BSA, further decreasing the likelihood that San Joaquin kit fox would occur in the BSA. Based on this information, it is unlikely that the San Joaquin kit fox occurs in the BSA.

Birds

Tricolored Blackbird

The tricolored blackbird is a California Species of Special Concern. Tricolored blackbirds are highly colonial and nomadic, and are largely endemic to the lowlands of California. They prefer to nest in large numbers, often in the thousands, in freshwater marshes with dense growths of herbaceous vegetation, such as mustard and thistle.

The marsh vegetation (e.g., cattails) in the wetland areas along the Kings River near the north end of the BSA could potentially support a small nesting colony of tricolored blackbirds. However, the adjacent upland vegetation comprised of vineyards and orchards is only marginal foraging habitat for this species as it prefers open fields. No tricolored blackbirds were observed during biological surveys. Based on this information, it is unlikely that tricolored blackbirds would nest in the BSA.

Swainson's Hawk

The Swainson's hawk is a State threatened species. It has no formal Federal status. Swainson's hawks are long-distance migrants, wintering primarily in South America, and returning north to breed. They return to the Central Valley in mid-March and begin migrating south in August. Nests are built in the tops of large trees, primarily those associated with riparian habitats.

Swainson's hawks are known to forage up to 10 miles from their nest sites. Swainson's hawks prefer to forage over large open grasslands or open farmland such as alfalfa fields. The mixed riparian forest community, in addition to the mature valley oaks in the olive orchard north of Goodfellow Avenue, could provide suitable nesting habitat for Swainson's hawk. However, the other communities in the BSA, specifically the vineyards and orchards, are not suitable foraging habitat for this species. No Swainson's hawks were observed during biological surveys. Based on this information, it is unlikely that Swainson's hawks would nest in the BSA.

Reptiles

Pacific Pond Turtle

The Pacific pond turtle, a California Species of Special Concern, is a highly aquatic species, found in permanent or nearly permanent bodies of water including ponds, marshes, rivers, streams, and irrigation ditches that typically have rocky or muddy bottoms and are vegetated with aquatic vegetation.

Although no pond turtles were observed in the BSA during site surveys, and the uplands adjacent to the Kings River (predominantly vineyards and orchards) are not suitable nesting habitat for this species, the riverine habitat in the Kings River and the ponded areas associated with the wetlands within the mixed riparian forest community near the north end of the BSA provide suitable aquatic habitat for Pacific pond turtle. Based on this information, there is moderate potential for Pacific pond turtle to occur in the BSA.

Invertebrates

Valley Elderberry Longhorn Beetle (VELB)

The Valley elderberry longhorn beetle is a Federally threatened species. It has no formal State status. The VELB was recommended for delisting by the U.S. Fish and Wildlife Service in 2006. On October 2, 2012, the USFWS formally proposed a rule to delist the VELB; however, delisting has not been finalized and therefore VELB remains protected under the Federal ESA.

VELB is solely dependent on elderberry shrubs for reproduction and survival. Dispersal patterns are unknown, and while adults are capable of flight, the range is likely limited. Elderberry shrubs were observed in the BSA and mapped during biological surveys as shown on Figure 3.4-1; however, these plants were located outside of the 619-acre mining site, within the mixed riparian forest community along the King River, an area planned for preservation. Due to the presence of elderberry shrubs within the mixed riparian forest community in the BSA, VELB is assumed to be present within the BSA.

Plants

Sanford's Arrowhead

Sanford's arrowhead is a CNPS List 1B plant. It has no formal State or Federal status. Sanford's arrowhead occurs in perennial freshwater features with little or no current such as marshes, swamps, and ditches. This species was observed during site surveys in spring and summer 2011 in the northernmost of the two ponded areas associated with the abandoned mining ponds located outside of the 619-acre mining site, within the mixed riparian forest community along the King River, an area planned for preservation. Approximately 5 individuals were observed during surveys in 2011, 2012, and 2013 and mapped as shown on Figure 3.4-1.

Sensitive Habitats

The Great Valley Mixed Riparian Forest and riverine communities are the only sensitive habitats in the BSA. These habitats, associated with the Kings River, are located along the western edge of the BSA, and total 40.5 acres and 20.3 acres, respectively.

These habitats may be regulated by the California Department of Fish and Wildlife pursuant to Section 1602 of the State Fish and Game Code, and may also be regulated by the U.S. Army Corps of Engineers (Army Corps) and/or RWQCB pursuant to Sections 404 and 401 of the CWA, as described below in Section 3.4.3.

3.4.3 Regulatory Setting

3.4.3.1 Federal

Federal Endangered Species Act (ESA) (16 U.S.C. §§1531-1544)

The Federal ESA provides protection for Federally listed endangered and threatened species and their habitats. An “endangered” species is a species in danger of extinction throughout all or a significant portion of its range. A “threatened” species is one that is likely to become endangered in the foreseeable future throughout all or a significant portion of its range. Other special status species include “proposed” species, and “species of concern.” Proposed species are those that have been officially proposed (in the Federal Register) for listing as threatened or endangered. “Species of concern” are species for which not enough scientific information has been gathered to support a listing proposal, but which still may be appropriate for listing in the future, after further study. A “de-listed” species is one whose population has reached its recovery goal and is no longer in jeopardy. The USFWS administers the Federal ESA. A project may obtain permission to take Federally-listed species in one of two ways: through a Section 10 Habitat Conservation Plan prepared by a private party, or under a Section 7 Biological Opinion from USFWS issued to another Federal agency that funds or permits an action. Under either section of the ESA, adverse impacts to Federally protected species are avoided, minimized or mitigated. Both cases require consultation with the USFWS, which ultimately issues a Biological Opinion determining whether the Federally listed species would be adversely impacted by a project, or issues an incidental take permit that allows for a specified number of individuals to be “taken” as part of the Project.

Clean Water Act – Section 404/401 Jurisdiction (33 U.S.C. §§1251-1387)

The Army Corps and the U.S. Environmental Protection Agency regulate the discharge of dredged and fill material into “waters of the United States” under Section 404 of the Clean Water Act (CWA). Army Corps jurisdiction over non-tidal waters of the United States extends to the “ordinary high water mark,” and to certain adjacent “wetlands” which meet certain criteria (33 C.F.R. §328.4). The discharge of dredged or fill material into waters of the United States at a project site requires a Section 404 permit, unless otherwise exempted from regulation by Section 404 of the CWA.

Army Corps regulatory jurisdiction under Section 404 is founded on a connection between the water body in question and interstate commerce. This connection may be direct, through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or indirect, through a nexus identified in Army Corps regulations. Recent U.S. Supreme Court decisions have restricted the application of “Waters of the U.S.” definition as applied to “nonnavigable, isolated, intrastate waters,” ephemeral streams, ditches, and other waters.

The Army Corps does not generally consider the waters listed below to be waters of the U.S. (51 Fed. Reg. 41,206; 41,217 (Nov. 13, 1986 Preamble to 33 C.F.R. §328.3)). The Army Corps does, however, reserve the right to regulate these waters on a case by case basis if such waters are determined to be waters of the U.S.:

- Non-tidal drainage and irrigation ditches excavated on dry land,
- Artificially irrigated areas that would revert to upland if the irrigation ceased,
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing,
- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons,
- Water filled depressions created in dry land incidental to construction activity and pits excavated in dry land for purposes of obtaining fill, sand or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the U.S.

In association with obtaining a Section 404 permit, a Water Quality Certification under Section 401 of the CWA must be obtained from the Regional Water Quality Control Board. To obtain approval of the application for Water Quality Certification, projects must follow the Army Corps’ 404(b)(1) Guidelines which specify avoidance of wetland impacts and minimization and mitigation of impacts to any affected wetlands. However, since a Section 404 permit is not anticipated to be required for the Project, the associated CWA Section 401 certification would also not be required.

Migratory Bird Treaty Act (16 U.S.C. §§703-712)

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, domestically implements a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union. The MBTA provides for international protection of migratory birds, and authorizes the Secretary of the Interior to regulate the “taking” of migratory birds. Specifically, the MBTA states that it shall be unlawful, except as permitted by regulations, “at any time, by any means, or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be

shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird . . .” (16 U.S.C. §703(a)). The current list of species protected by the MBTA can be found in Title 50, C.F.R. Section 10.13.

Executive Order 11990 - Protection of Wetlands (42 FR 26961-26965, May 25, 1977)

Executive Order 11990 requires Federal agencies to provide leadership and take action to minimize destruction, loss, or degradation of wetlands and to preserve and enhance the natural qualities of these lands. Federal agencies are required to avoid undertaking or providing support for new construction located in wetlands unless (1) no practicable alternative exists, and (2) all practical measures have been taken to minimize harm to wetlands.

3.4.3.2 State

California Endangered Species Act (CESA) (Cal. Fish & Game Code §§2050-2116)

Similar to the Federal ESA, the CESA, along with the Native Plant Protection Act (Cal. Fish & Game Code §§ 1900-1913), authorizes the California Fish and Game Commission to designate, protect, and regulate the taking of special status species in the State. However, unlike the Federal ESA, CESA also prohibits take of species proposed for listing (called “candidate species” by the State). CESA defines “endangered” as those species which are “in serious danger of becoming extinct throughout all, or a significant portion, of its range” State-listed “threatened” species are those not presently threatened with extinction, but which are “likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts” Section 2080 of the Fish and Game Code prohibits the taking of state-listed plants and animals. Any projects that may adversely impact state-listed threatened or endangered species must formally consult with CDFW. CDFW can issue incidental take permits under Section 2081 of CESA.

CDFW Species of Concern

In addition to species formally listed under the ESA and the CESA, “species of special concern” receive consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of “Species of Special Concern,” developed by CDFW. It tracks species in California whose breeding populations in California may be decreasing or facing local extirpation. To avoid the future need to list these species as endangered or threatened, CDFW recommends consideration of these species, which do not yet have any legal status, during analysis of the impacts of projects.

Birds of Prey (Cal. Fish & Game Code § 3503.5)

Birds of prey are also protected in California under provisions of the Fish and Game Code, Section 3503.5, which states that it is “unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (bird-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.”

Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW.

Stream Alteration (Cal. Fish & Game Code §§ 1600 – 1607)

Under Section 1602 of the California Fish and Game Code, a private party must notify CDFW if a project would “substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.” If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures to protect those resources. If these measures are agreeable to the party, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures. Notification under Section 1602 is not anticipated to be required for the Project because the Project would not affect or use any material from the bed, channel, or bank of any river, stream, or lake.

Native Plant Protection Act (Cal. Fish & Game Code §§ 1900 – 1913)

The Native Plant Protection Act prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered (as defined by the CDFW). An exception in the Act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify the CDFW and give that state agency at least 10 days to retrieve the plants before they are plowed under or otherwise destroyed. Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

3.4.3.3 Local

The Fresno County General Plan identifies environmental, social and economic goals for the region, and sets forth policies, standards, and programs to guide physical development within the County. The goals and policies for the protection of wildlife and other biological resources from the General Plan Open Space and Conservation Element listed below are relevant to the Project.

Vision Statement

Resource Protection: The plan seeks to protect and promote the careful management of the County’s natural resources, such as its soils, water, air quality, minerals, and wildlife and its habitat, to support the County’s economic goals and to maintain the County’s environmental quality.

Policy OS-E.1. The County shall support efforts to avoid the “net” loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose feasible mitigation for the loss of wildlife habitat that is critical to supporting special status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function, and value of the habitat that was removed or degraded. Mitigation may be achieved through any

combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the USFWS and the CDFW to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.

Policy OS-E.2. The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both onsite habitats that are purposely avoided and significant habitats that are adjacent to the Project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the USFWS and/or the CDFW.

Policy OS-E.3. The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where feasible, located so that the value of the habitat for wildlife is maintained.

Policy OS-E.6. The County shall ensure the conservation of large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife populations, as long as this preservation does not threaten the economic well-being of the County.

Policy OS-E.9. Prior to approval of discretionary development permits, the County shall require, as part of any required environmental review process, a biological resources evaluation of the Project site by a qualified biologist. The evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special status plants or animals. Such evaluation will consider the potential for significant impact on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-E.12. The County shall ensure the protection of fish and wildlife habitats from environmentally-degrading effluents originating from mining and construction activities that are adjacent to aquatic habitats.

Policy OS-E.13. The County should protect to the maximum extent practicable wetlands, riparian habitat, and meadows since they are recognized as essential habitats for birds and wildlife.

Policy OS-E.16. Areas that have unusually high value for fish and wildlife propagation should be preserved in a natural state to the maximum possible extent.

Policy OS-E.17. The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with State and Federal endangered species laws.

Policy OS-F.1. The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides and ridges, and along important transportation corridors, consistent with fire hazard and property line clearing requirements.

Policy OS-F.2. The County shall require developers to use native and compatible nonnative plant species, especially drought-resistant species, to the extent possible, in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for project mitigation.

Policy OS-F.3. The County shall support the preservation of significant areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

Policy OS-F.4. The County shall ensure that landmark trees are preserved and protected whenever possible.

Policy OS-F.5. The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the Project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-F.7. The County shall require developers to take into account a site's natural topography with respect to the design and siting of all physical improvements in order to minimize grading.

Policy OS-F.8. The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches and on unused or marginal land for the benefit of wildlife.

Policy OS-F.10. The County shall require that new developments preserve natural woodlands to the maximum extent possible.

Policy OS-F.11. The County shall promote the preservation and management of oak woodlands by encouraging landowners to follow the Fresno County Oak Management Guidelines and to prepare an Oak Management Plan for their property.

3.4.4 Significance Thresholds

3.4.4.1 Appendix G Thresholds of Significance

Significant impacts to biological resources would occur if the Project would:

- a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;*
- b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;*
- c) *Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or any other means;*
- d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;*
- e) *Conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance; or*
- f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.*

3.4.4.2 Additional Thresholds of Significance

CEQA Guidelines Section 15065(a)(1) requires a mandatory finding of significance for projects that have the potential to “substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species” Although threatened and endangered species are protected by specific Federal and State statutes as described above, CEQA Guidelines Section 15380(d) provides that a species not listed on the Federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria.

Requirements identified in the County policies and plans are addressed by the significance criteria above. There are no additional thresholds of significance related to the topical environmental issue.

3.4.5 Methodology

This analysis is based on the results of the BRE, review of applicable Federal, State and local requirements, Project design features, BMPs, operating practices and other environmental protection measures that have been incorporated into the Project to minimize potential impacts on the environment, and comments received during the scoping process.

Scoping letters that contained specific concerns regarding biological resources included, but were not limited to, the following letters:

- Letter from the CDFW, September 3, 2013;
- Letter from the City of Reedley, September 3, 2013.

A copy of the Scoping Report which includes all the comment letters is provided in Appendix A. If necessary, consultation with the natural resources agencies will be conducted to further address their concerns.

Preparation of the BRE began with a literature review, including database searches of the California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS) Online Inventory, and USFWS special-status species lists.

Surveys, as appropriate, were performed as described below for those species that could potentially occur in the BSA based on the review described above. All field surveys included the entire 833-acre BSA, with a particular focus on the riparian corridor along the Kings River.

A preliminary reconnaissance survey was performed on May 20, 2011, by John C. Stebbins, consulting botanist, Chris Winchell, botanist, and John Buada and Nikolle Brown, biologist, of Buada Associates. The BSA was surveyed mainly from a vehicle but also on foot. Plant communities and dominant species were noted and wildlife observations were recorded.

Methodical, on-site botanical field surveys were performed on foot from May 21, 2011 to June 19, 2011 by John C. Stebbins and Chris Winchell. A follow-up survey was conducted by John Stebbins on July 18, 2012. Wildlife surveys were performed on foot from May 24, 2011 to May 27, 2011 by Nikolle Brown and John Sivas, biologist, assisted by two field technicians. An additional survey was conducted by Nikolle Brown on June 2, 2011. Surveys consisted of walking transects specified to the width and density of the crops and to the accessibility of the riparian habitat. A follow-up wildlife survey was conducted by Nikolle Brown on July 18, 2012. Habitat was assessed to determine suitability for special status species (e.g., Swainson's hawk, burrowing owl). A focused study was also conducted to identify active raptor nests. A follow-up botanical survey was conducted by John Stebbins on July 18, 2012. Wildlife and plant species observed or detected were recorded. The BRE located in Appendix E includes lists of all wildlife and plant species observed in the BSA during field surveys. Table 3.4-3 summarizes the field surveys.

A preliminary jurisdictional delineation for the uncovered portion of the Hanke Ditch, which is located in the southeast portion of the BSA, was completed in May 2013.

During the scoping process, there was concern regarding the Project's potential impacts to the burrowing owl. Because burrowing owl is not expected to occur on the Project site, it is not included in the Table 3.4-2 (but is identified on Table 4 of the BRE). Potential habitat for burrowing owl was assessed during the wildlife surveys in May and June 2011, and July 2012. No suitable burrow (nesting)

habitat or foraging habitat was present and the nearest CNDDDB record is over 8 miles away from the Project site. Consequently, burrowing owl is not expected to occur on or nest at the Project site.

Table 3.4-3. Summary of Field Surveys

Date	Personnel	Tasks
May 20, 2011	J. Buada, N. Brown, J. Stebbins, C. Winchell	Reconnaissance survey
May 20, 21, 22, 23, 24, 25, 2011	J. Stebbins, C. Winchell	Special-status plants survey
May 24, 25, 26, 27, 2011	N. Brown, J. Silvas	Wildlife surveys
June 2, 2011	N. Brown	Wildlife survey
July 18, 2012	N. Brown, J. Stebbins	Wildlife and special-status plants surveys

Project Design Features, BMPs and Minimization Measures

As discussed in Section 2.3.17, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project to minimize potential impacts on the environment. Some of these Protective Measures are as follows:

- In order to protect the habitat of fish and wildlife, the Project establishes the following setbacks and buffer areas in which no excavation of material or overburden will take place: One hundred (100) feet from the top of the Kings River bank; fifty (50) feet from the either of the regulated and designated floodway; or fifty (50) feet from the dripline of riparian vegetation or mature oak trees; whichever is greater.
- Approximately 351 acres or 57% of the Project site will be reclaimed to riparian and open water wildlife habitat.
- Agriculture will be continued as an on-site activity until a given phase is deemed necessary to mine, thereby preserving existing habitat and foraging opportunities for common wildlife species that may occur in agricultural areas for an extended period.
- Approximately 268 acres or 43% of the Project site will be reclaimed to farmland, thereby returning it to potential habitat and foraging areas for common wildlife species that may occur in agricultural areas.
- Stormwater and process water drainage BMPs will be implemented.
- Employee training programs will be conducted to educate personnel of habitat sensitivity issues.
- Design features addressing potential impacts from lighting and noise will be incorporated as discussed in Section 3.11.

Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

If materials from Phases 6A, 6B and 7 were to be processed at the CUP 3052 plant (Section 2.3.15.7), the relocation of a conveyor within the Project site would not create any different or additional effects on the biological resources.

3.4.6 Project-Level Impacts and Mitigation Measures**3.4.6.1 Issues Found to Have No Impact****Conflicts with Habitat Conservation Plans**

The Project site is not located within the boundaries of any adopted habitat conservation plan (HCP) or natural community conservation plan (NCCP). Portions of the Project site are within the planning area of the proposed East Fresno HCP, which received initial grant funding from USFWS in 2009. This HCP is still in the preliminary planning phase, and has not been adopted. Since there is no adopted HCP or NCCP affecting the Project area, the Project would result in no impact related to a conflict with any applicable HCP or NCCP. Therefore the following threshold criteria are not considered further:

- f) ***Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?***

3.4.6.2 Adverse Effects on Riparian Habitat**Impact Statement**

Impact BIO-1: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (**CEQA Guidelines Threshold Criteria (b)**)

Impact Analysis

Sensitive habitats in the BSA include Great Valley Mixed Riparian Forest and riverine communities. The Project will not remove any riparian vegetation, and a minimum 50-foot setback will be established from the edge of the mixed riparian forest community. The majority of the riparian habitat is currently located adjacent to active vineyards and orchards. Farm roads which provide access for trucks, tractors and other farming vehicles are located next to the riparian areas. Farming activities such as plowing, pruning, weed abatement (i.e., herbicide and pesticide spraying) currently occur within approximately 10 feet (the width of the farm road) of the riparian areas. Therefore, the Project setback of 50 feet or more is considered a beneficial impact since it increases the buffer between the riparian habitat and the current land use (agriculture) by more than 40 feet.

Completion of the Reclamation Plan will create approximately 351 acres of riparian habitat which would be a net beneficial effect of the Project. Therefore, the Project would have a less than significant impact on riparian habitats and other sensitive natural communities, and no mitigation is required.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required.

Level of Significance after Mitigation

Not applicable.

3.4.6.3 Adverse Effects on Wetlands**Impact Statement**

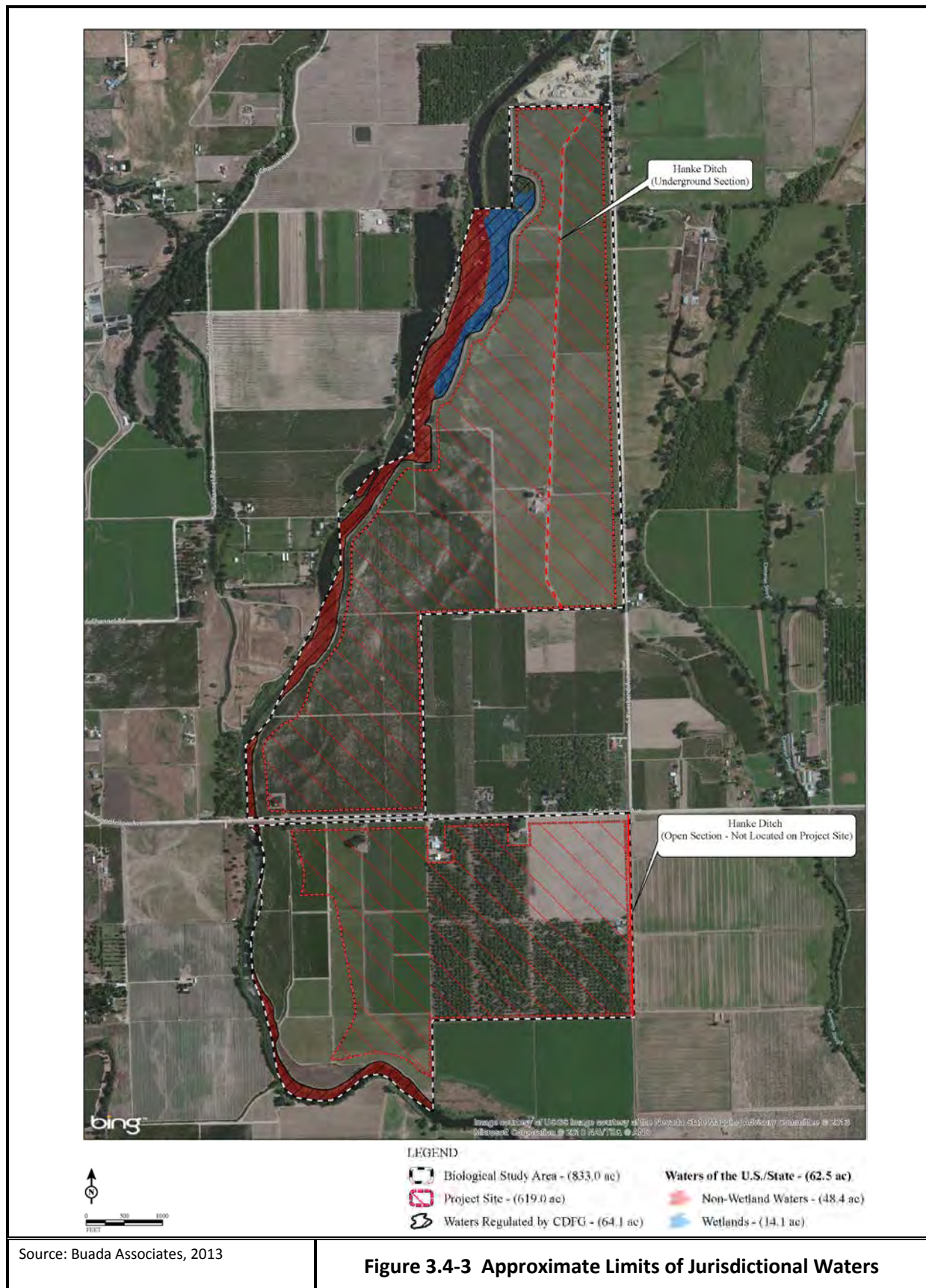
Impact BIO-2: Would the Project have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or any other means? (**CEQA Guidelines Threshold Criteria (c)**)

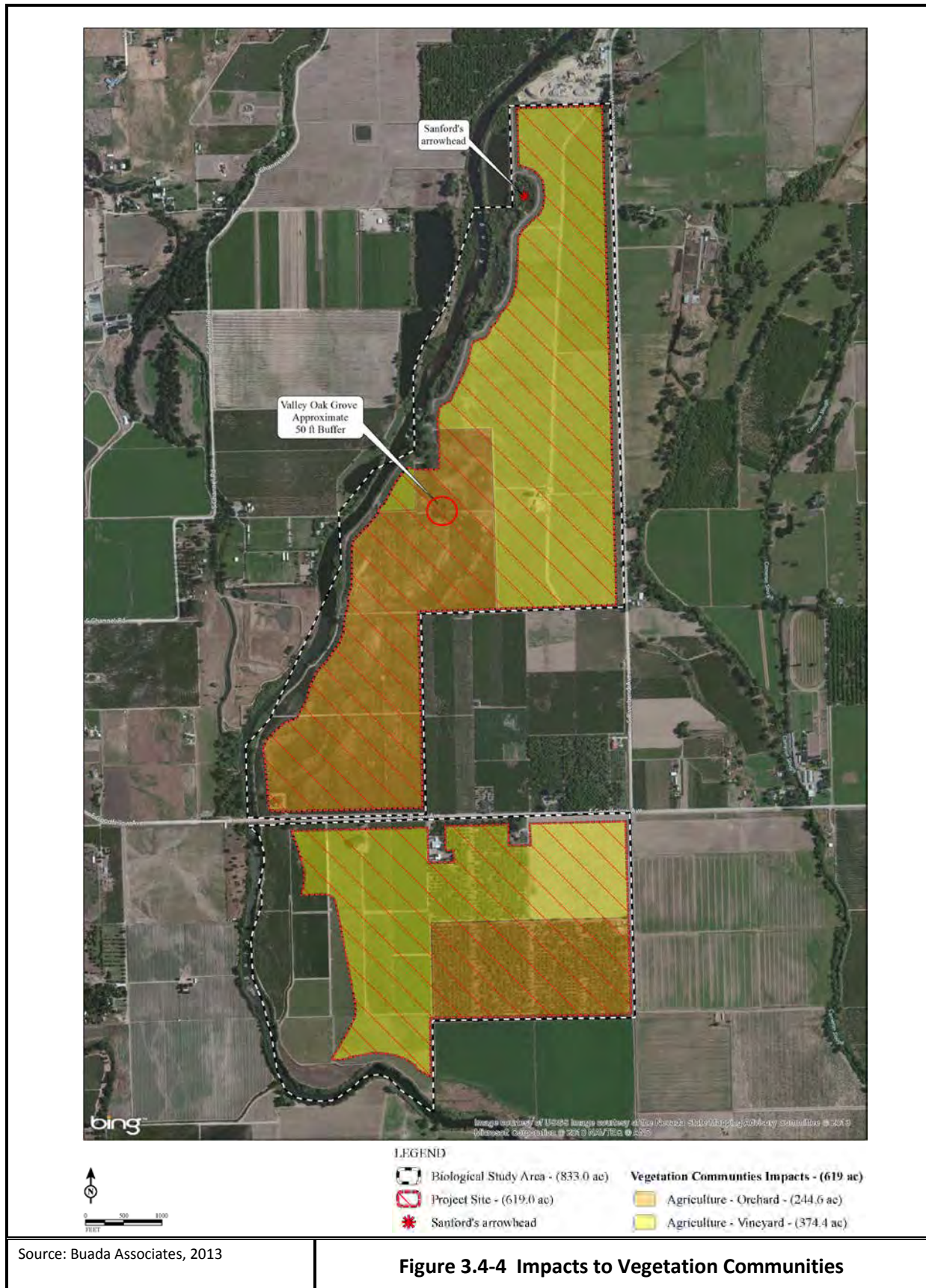
Impact Analysis

Aquatic resources in the BSA include the Kings River, the associated mixed riparian forest community, and the Hanke Ditch, as shown on Figure 3.4-3, Figure 3.4-4, and Figure 3.4-5. A formal jurisdictional delineation has not been conducted; however, a preliminary jurisdictional delineation was completed in May 2013.

Approximately 62.5 acres of potential Waters of the U.S. occur in the BSA, of which 48.4 acres are non-wetland waters and 14.1 acres are wetlands. These areas are potentially subject to regulation by the Army Corps, RWQCB, and/or CDFW pursuant to the regulations described in Section 3.4.3.

In the BSA waters of the U.S. and waters of the State are the same water features and are referred to as waters of the U.S./State. The only potential Water of the U.S./State within the Project site is the underground pipeline portion of the Hanke Ditch. As part of the proposed Project, this portion of Hanke Ditch (north of Goodfellow Avenue) would be relocated eastward, to a location immediately west of Riverbend Avenue, and would be daylighted, rendering it similar in design to the existing southerly portion of the ditch. Given that the Hanke Ditch is a water supply ditch for agriculture, it is not clear under Federal law, for purposes of this analysis, whether the Hanke Ditch would be considered a jurisdictional water. The only change to this feature would be to replace the underground piped section with an open ditch section, thus, any impacts to the Hanke Ditch would be beneficial and not require any mitigation, other than compliance with the Project SWPPP measures for erosion control during the connection of the former pipeline sections to the existing open ditch interface. Therefore, the Project would result in a less than significant impact and no mitigation is required.





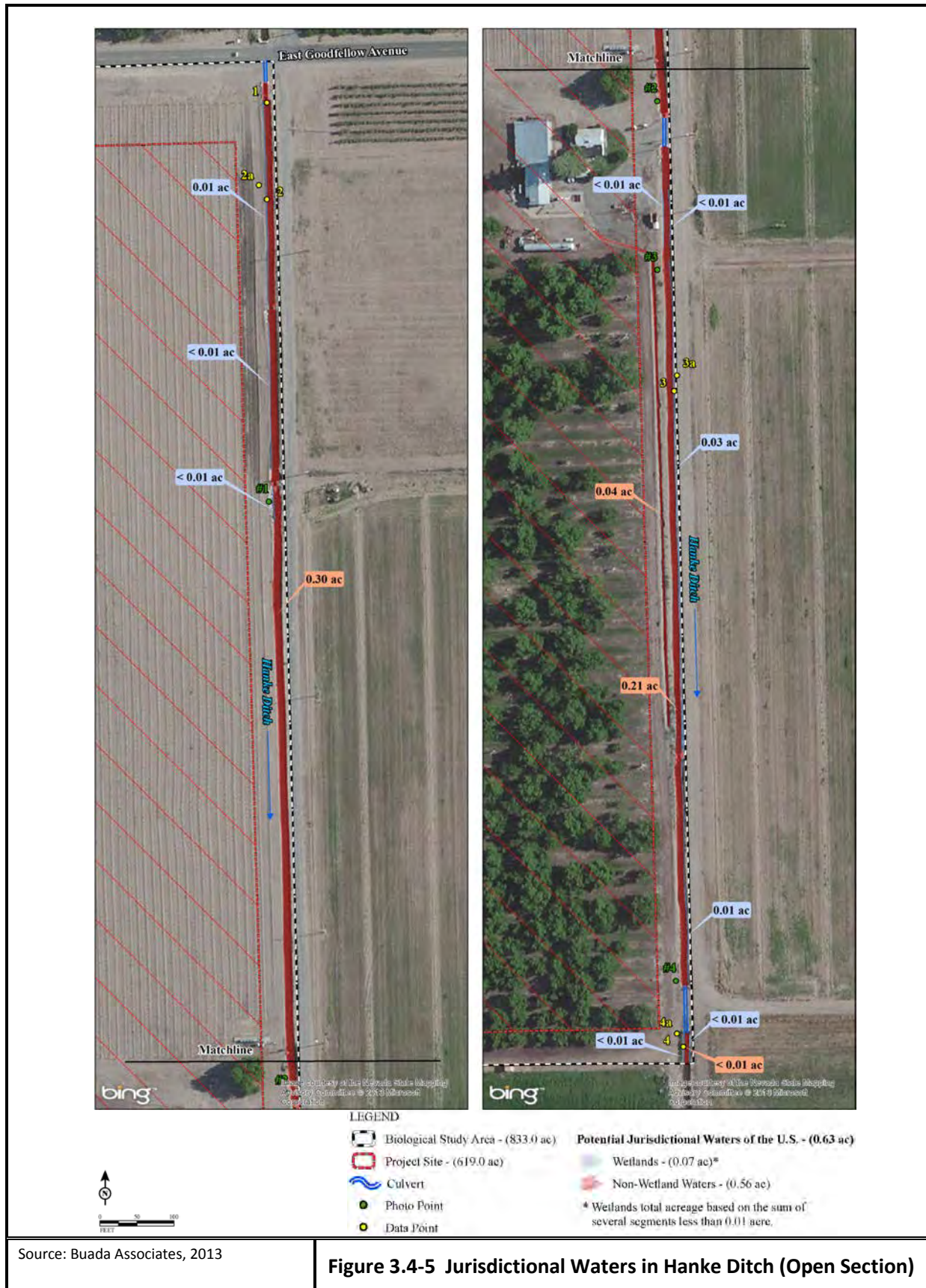


Figure 3.4-5 Jurisdictional Waters in Hanke Ditch (Open Section)

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required.

Level of Significance after Mitigation

Not applicable.

3.4.6.4 Conflict with Movement of Migratory Fish or Wildlife Species**Impact Statement**

Impact BIO-3: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? **(CEQA Guidelines Threshold Criteria (d))**

Impact Analysis

The Project site is located on the banks of the Kings River, which may support the movement of native species and serves as a migratory wildlife corridor. The Project would not remove any riparian vegetation and a minimum 50-foot setback will be established from the edge of the mixed riparian forest community. Therefore, natural habitats adjacent to the river, including the Great Valley Mixed Riparian Forest and riverine communities, would not be impacted by the Project. The remainder of the Project site, which consists of predominantly agricultural uses, does not provide appropriate habitat for native or migratory species, and is not used as nursery site. Because the potential migratory route and suitable habitat for native or migratory species is protected from development, there would be a less than significant impact related to conflicts with the movement of any native resident or migratory fish or wildlife species, with established native resident or migratory wildlife corridors, or with native wildlife nursery sites.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required.

Level of Significance after Mitigation

Not applicable.

3.4.6.5 Interference with Biological Resource Policies or Ordinances

Impact Statement

Impact BIO-4: Would the Project conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance? **(CEQA Guidelines Threshold Criteria (e))**

Impact Analysis

Fresno County's General Plan policies protecting biological resources are identified in Section 3.4.3.3 and have been evaluated in this analysis. The Project would be consistent with all related policies. Fresno County's tree ordinance (Code of Ordinances, Chapter 13.12) pertains only to trees and shrubs (aka "street trees") located within a County Highway and would therefore not pertain to this Project. Based on this analysis, the Project is consistent with, and would not interfere substantially with, any local policies or ordinances protecting biological resources. Therefore, this impact is less than significant and no mitigation is required.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required.

Level of Significance after Mitigation

Not applicable.

3.4.6.6 Adverse Effects on Species

Impact Statement

Impact BIO-5: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? **(CEQA Guidelines Threshold Criteria (a))**

Impact Analysis

As described in Section 3.4.2, there are eight special-status species that could occur in the Project area based on database records and an assessment of on-site habitats. These include the pallid bat, hoary bat, San Joaquin kit fox, tricolored blackbird, Swainson's hawk, Pacific pond turtle, VELB, and Sanford's arrowhead. Project impacts on these species are individually discussed below.

Pallid Bat and Hoary Bat

The Project would remove approximately 619 acres of existing vineyards and orchards that provide potential foraging habitat for the pallid bat and hoary bat. However, phasing of mining activities along with concurrent reclamation activities would provide foraging opportunities for bats within the Project limits. Implementation of the Reclamation Plan would create approximately 268 acres of new farmland, 318 acres of open water, and approximately 33 acres of riparian habitat. The net loss of approximately 351 acres of potential farmland foraging habitat represents a small percentage of the total quantity of similar habitat in the region (1.37 million acres of Important Farmland in Fresno County). Consequently, the loss of foraging habitat for bats associated with Project implementation is considered a less than significant impact, and no mitigation is required.

The Project would not remove any riparian vegetation or mature trees that could support roosting bats. In addition, a minimum 50-foot setback would be established from the edge of the mixed riparian forest or mature oak trees, providing further protection for roosting bats. However, the Project would remove several agricultural buildings that could potentially support roosting bats. Mitigation Measure BIO-1 is proposed to avoid and minimize impacts to bats potentially roosting in agricultural buildings within the Project limits, which would be removed. Implementation of these measures would reduce impacts to roosting bats to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant

Mitigation Measures**Mitigation Measure BIO-1:**

1. All buildings to be removed shall be surveyed by a qualified biologist to determine if they are being used as a roost site for bats, and if so, what type of roosting behavior is occurring (night roost vs. day/maternity roost). The survey shall be conducted in June or July when maternity roosts would be most active.
2. Any buildings to be removed that are determined to support only night-roosting bats shall be removed between September 1 and October 14, or between February 16 and April 14. Removal of buildings during these periods will avoid impacts to any bats utilizing the buildings during the normal breeding season (April 15 to August 30) and winter torpor (October 15 to February 15).
3. If a building is determined to support a day/maternity roost, a mitigation plan (i.e., removal plan) shall be prepared by a qualified bat biologist experienced with bat eviction and exclusion possessing a Memorandum of Understanding with the California Department of Fish and Wildlife. At a minimum, the mitigation plan shall provide for

humane eviction of the existing bat population and creation of artificial day roost habitat, to mitigate impacts resulting from removal of the roost site.

Level of Significance after Mitigation

Less Than Significant

San Joaquin Kit Fox

There is no suitable denning or foraging habitat for San Joaquin kit fox in the BSA. As a result, the Project would not impact denning or foraging habitat for San Joaquin kit fox.

The mixed riparian forest community along the Kings River could be used by this species as a movement corridor. Since the Project would not impact the riparian community and 100-foot setbacks would be established from the top of bank of the Kings River, the Project would not impact San Joaquin kit fox potentially moving through the riparian community within the BSA. Therefore, the Project would result in less than significant impacts to the San Joaquin kit fox and no mitigation is required.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance after Mitigation

Not applicable.

Tricolored Blackbird

Tricolored blackbirds could potentially nest in the northern portion of the BSA within the wetlands associated with the mixed riparian forest community. However, the Project would not remove any riparian vegetation and a minimum 50-foot setback would be established from the edge of the mixed riparian forest. Consequently, the Project would not impact tricolored blackbirds if this species nests in the BSA. In addition, implementation of the Reclamation Plan would create approximately 351 acres of open water and riparian habitat which would provide additional nesting habitat around the edges of the ponds which would be a beneficial effect of the Project for tricolored blackbird. For these reasons, the Project would result in less than significant impacts on tricolored blackbirds and no mitigation is required.

The Project would remove approximately 619 acres of vineyards and orchards that provide marginal foraging habitat for tricolored blackbirds. However, the Reclamation Plan would create approximately 268 acres of new farmland. The net loss of 351 acres of marginal foraging habitat represents a small percentage of the total quantity of similar habitat in the region (1.37 million acres of Important

Farmland in Fresno County). Consequently, the loss of marginal habitat for tricolored blackbird associated with Project implementation is considered a less than significant impact, and no mitigation is required.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance after Mitigation

Not applicable.

Swainson's Hawk

There is no suitable foraging habitat for Swainson's hawk within the BSA. As a result, the Project would not impact foraging habitat for this species, and no mitigation is required.

Swainson's hawk and other raptors could potentially nest in the mixed riparian forest community or in the mature valley oaks within the olive orchard. The Project would not remove any riparian vegetation or mature trees that could support nesting Swainson's hawks or other raptors, and a minimum 50-foot setback would be established from the edge of the mixed riparian forest or mature oak trees. Even considering these measures, if work begins during the nesting season and Swainson's hawks or other raptors are nesting in the BSA, these species could be impacted and this would be considered a potentially significant impact. The following measure is proposed to avoid and minimize impacts to Swainson's hawks or other raptors nesting in the BSA; implementation of this measure would reduce impacts to nesting birds to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant

Mitigation Measures**Mitigation Measure BIO-2:**

1. To the maximum extent practicable, all construction activities associated with the initiation of work on the Project site or initiation of new mining phases shall be scheduled between September 15 and February 1, which is the typical non-nesting season.
2. If the initiation of work in new areas cannot be scheduled during the non-nesting season, prior to the initiation of work on the Project site and each individual phase of

mining (e.g., Phase 1A, 1B, etc.), a qualified biologist shall survey all suitable nest trees within 0.25 mile of the work limits for nesting Swainson's hawks, within 500 feet of the work limits for other raptors, and within 250 feet of the work limits for other nesting birds no more than 10 days prior to the start of ground disturbing activities. The survey will follow the methodology developed by the Swainson's Hawk Technical Advisory Committee (SWHA TAC, 2000).

3. If nesting Swainson's hawks are found within 0.25 mile, other nesting raptors are found within 500 feet, or other nesting birds are found within 250 feet of the work limits as described in Item 2 above:
 - a. A qualified biologist shall evaluate the potential for the proposed work to disturb nesting activities. The evaluation criteria shall include, but not be limited to, the location/orientation of the nest in the nest tree, the distance of the nest to the work limits, the line of sight between the nest and the work limits, and the description of the proposed work. The nest shall be continually surveyed for the first 24 hours.
 - b. CDFW shall be contacted to review the evaluation and determine if the Project can proceed without adversely affecting nesting activities.
 - c. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities that occur during the breeding season to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the Project is adversely affecting nesting activities.
4. If no nesting Swainson's hawks are found within 0.25 miles, no other nesting raptors are found within 500 feet, or no other nesting birds are found 250 feet of the work limits as described in measure 2 above, work can proceed as planned.
5. Construction initiated during the non-nesting season and continuing into the nesting season shall not be subject to the above measures.

Level of Significance after Mitigation

Less Than Significant

Pacific Pond Turtle

The Kings River and the wetland areas associated with the mixed riparian forest in the northern part of the BSA provide suitable aquatic habitat for the Pacific pond turtle. Mining on the Project site would avoid all wetland areas, and a minimum 50-foot setback from the edge of the mixed riparian forest community to the mine site would be required. Consequently, the Project would not impact aquatic habitat for the Pacific pond turtle. Implementation of the Reclamation Plan would create approximately 351 acres of open water and riparian habitat which would be a beneficial effect of the Project for the

Pacific pond turtle. Therefore, the Project would result in less than significant impacts to the Pacific pond turtle and no mitigation is required.

There is no suitable upland nesting habitat for the Pacific pond turtle within the BSA. As a result, activity within the Project site would not impact nesting habitat for this species, and no mitigation is required.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance after Mitigation

Not applicable.

Valley Elderberry Longhorn Beetle

Elderberry shrubs, the host plant and habitat for VELB, occur in the BSA within the mixed riparian forest community along the Kings River. It is unknown whether the elderberry shrubs are inhabited by VELB. Generally, the habitat of a species listed under the Federal ESA is only protected if it is occupied. Non-occupied habitat is not protected under the Federal ESA, unless "such areas are essential for the conservation of the species." (*Arizona Cattle Growers Ass'n v. U.S. Fish and Wildlife* (9th Cir. 2001) 273 F.3d 1229.).

Normal farming activities such as plowing, pruning, weed abatement (i.e., herbicide spraying) previously and currently occur within 10 feet of the riparian habitat.

The Project design includes a 50-foot setback from the mixed riparian forest community which would provide substantially more protection to VELB than currently exists. No riparian habitat will be directly impacted by this Project as the disturbance footprint was specifically designed to avoid any encroachment into riparian habitat. Consequently, the Project would not result in direct impacts to elderberry shrubs or VELB (e.g., removal of a shrub).

However, per USFWS guidance (1996), indirect impacts could occur to VELB if Project grading encroaches within 100 feet of the dripline of an elderberry shrub with one or more stems of 1-inch diameter at ground level (i.e., suitable VELB habitat). This would be considered a potentially significant impact. The following mitigation measure is proposed to avoid or minimize impacts to VELB. Implementation of this measure would reduce impacts to VELB to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant

Mitigation Measures

Mitigation Measure BIO-3:

1. Prior to the start of ground disturbing activities for the aggregate plant and each individual phase of mining (i.e. Phase 1A, 1B), surveys for elderberry shrubs shall be conducted within the mixed riparian forest community within 100 feet of the work limits. Any elderberry shrubs identified shall be located on a map and the stems inventoried in accordance with USFWS guidelines.
2. To the maximum extent practicable, all Project activities shall be set back a minimum of 100 feet from all elderberry shrubs with one or more stems of 1-inch diameter at ground level growing within the BSA or adjacent areas. If a 100-foot setback cannot be maintained, implementation of additional mitigation measures described below shall be required in accordance with USFWS guidelines:
 - a. Prior to initiation of construction, the limits of all construction, access roads, staging areas, etc., shall be staked. The staked areas shall be inspected by a qualified biologist. Based on this inspection, additional refinements to construction areas shall be performed as necessary and as feasible to ensure a minimum 20-foot setback from the dripline of all elderberry plants.
 - b. Once the final limits of construction are set, brightly colored fencing (i.e., snow fencing) shall be installed at the 20-foot setback around the perimeter of each elderberry plant or plant group under the direction of a qualified biologist.
 - c. Signs shall be posted every 50 feet along the edge of the VELB avoidance area with the following information: "This area is habitat for the Valley Elderberry Longhorn Beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment."
 - d. Operators shall be briefed on the need to avoid damage to elderberry shrubs and the possible penalties for not complying with these requirements. All work crews shall be advised of the status of VELB and the need to protect the elderberry shrubs.
 - e. During the initial construction period for each phase of mining, a qualified biologist shall inspect the mining area periodically to assure that the Project is not affecting VELB.

The above mitigation measures would cease to be required if and when the VELB is no longer listed as a threatened species under the Endangered Species Act.

Level of Significance after Mitigation

Less Than Significant

Sanford's Arrowhead

Sanford's arrowhead was observed in the northernmost of the two ponded areas within the wetland associated with the mixed riparian forest in the northern part of the BSA. The Project design includes a minimum 50-foot setback from the edge of the mixed riparian forest community. Therefore, the Project would not impact Sanford's arrowhead which occurs only within this riparian forest community, and no mitigation is required.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance after Mitigation

Not applicable.

3.4.7 Cumulative-Level Impacts and Mitigation Measures

The geographical context for the analysis of cumulative impacts to biological resources properly includes those communities adjacent and contiguous to the Kings River in Fresno County.

As discussed in Section 3.4.6.1, CEQA Guidelines Threshold (f) was determined to have no impact and therefore further evaluation of this impact criterion is not considered necessary. The potential cumulative impacts associated with CEQA Thresholds a), b), c), d) and e) are discussed below.

Would the Project, when considered in conjunction with other cumulative projects, have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (CEQA Guidelines Threshold Criteria (b))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. As part of the evaluation process, the applicants were required to analyze their projects' impacts and conduct field surveys to evaluate sensitive habitat potential. It was found that cumulative effects on biological resources would not be expected due to the previously disturbed nature of the sites (e.g., agriculture and grazing) of all of these projects. In addition, the reclamation activities for these projects will either return much of the area to habitat or, in some cases, result in an increase of habitat over baseline conditions. These

projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. However, these projects are not located adjacent to the Kings River and would be too distant to have a significant cumulative effect on biological resources.

As discussed in Section 3.4.6.2, the Project would not remove any riparian or sensitive habitat and a minimum of a 50-foot setback would be established from the edge of the riparian community. This is considered a beneficial impact since it increases the distance between the riparian habitat and the current land use (agriculture) by more than 40 feet. Therefore, the Project's contribution to potential cumulative impacts would not be considerable, and there would be no significant cumulative impacts to riparian and sensitive communities.

Would the Project, when considered in conjunction with other cumulative projects, have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filing, hydrological interruption, or any other means? (CEQA Guidelines Threshold Criteria (c))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. As part of the evaluation process, the applicants were required to analyze their projects' potential impacts to Federally protected wetlands as defined by Section 404 of the CWA. The only identified project that is anticipated to have any impact on Federally protected wetlands is the Sanger-Centerville project. Impacts for that project were determined to be less than significant with mitigation. Therefore, it is considered that the overall significant cumulative impact would be less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. However, these projects are not located adjacent to the Kings River and would be too distant to contribute to a significant cumulative effect on biological resources.

The only potential Waters of the U.S./State within the Project site are the underground pipeline portion of the Hanke Ditch. The only impact to this feature would be to replace the underground piped section with an open ditch section. Thus, to the extent that there are any impacts to the Hanke Ditch, they would be beneficial. Therefore, the Project's contribution to cumulative impacts to wetlands is considered to be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance? (CEQA Guidelines Threshold Criteria (e))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase, and it was determined that these projects would not conflict or interfere with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance. Therefore, the overall cumulative impact would be less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are still being evaluated. However, these projects are not located adjacent to the Kings River and would be too distant to contribute to a significant cumulative effect on biological resources.

The Project would be consistent with all local policies and ordinances protecting biological resources. Thus the Project would not have a cumulatively considerable impact on conflicts with local policies or ordinances protecting biological resources, and this impact is considered less than significant.

Would the Project, when considered in conjunction with other cumulative projects, have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (CEQA Guidelines Threshold Criteria (a))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement process. As part of the evaluation process, the applicants were required to analyze their projects' impacts and/or conduct surveys for listed or candidate species and potential habitat. Impacts to biological resources would not be expected due to the previously disturbed nature (e.g., agriculture and grazing) of these identified projects. In addition, the reclamation activities for these projects will either return much of the area to habitat and in some cases result in an increase of habitat over baseline conditions. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact to special status species.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. However, these projects are not located adjacent to the Kings River and are too distant to contribute to a significant impact to the biological resources impacted by the Project.

As discussed in Section 3.4.6.6, there are eight special-status species that could occur in the BSA. Project impacts to these species were discussed in detail above and it was determined that the Project's impacts would either be less than significant or less than significant with the incorporation of mitigation measures. Therefore, the Project's contribution to cumulative impacts to candidate, sensitive, or special status species is considered to be less than significant.

3.4.8 Alternatives to Significant Effects

No Project Alternative

The No Project Alternative would avoid all Project-related impacts associated with biological resources, including those beneficial to these resources. Potential impacts associated with the current agricultural land use, such as the use of pesticides and fertilizers and the lack of buffer zones adjacent to the riparian areas, would remain. In addition, after the reclamation of the Project (which would not occur under the No Project Alternative), the quality of the habitat created on the Project site would be significantly higher than what currently exists at the Project site. Since the Project design features and BMPs already reduce biological resources impacts to a less than significant level, this alternative would not significantly reduce potential impacts.

Reduced Annual Production Alternative

This alternative would evaluate the potential impacts from artificially limiting the proposed production by a given amount. This alternative would not result in any changes that would impact biological resources; therefore, it would not reduce potential impacts to biological resource associated with the Project, which are already at or mitigated to a less than significant level.

Reduced Project Size Alternative

This alternative would evaluate the potential impacts from artificially reducing the Project footprint by some stated amount. The assessment of potential impacts to biological resources for the Project determined that no additional impacts would occur given the planned implementation of Protection Measures and mitigation measures. Because the proposed mine operations would actually increase the setbacks from what currently exists between the farming activities and the riparian areas (a net benefit to biological resources), this alternative would not reduce impacts to biological resources.

Reduced Mining Depth Alternative

This alternative would evaluate the potential impacts from artificially reducing the mining depth by some stated amount. Potential biological impacts associated with the Project would not change with this alternative. The alternative would not avoid or lessen any potential for impacts to biological resources. In addition, because this alternative would require less fill materials to reclaim the excavations, more of the Project site would be reclaimed to agriculture and less open water habitat would be created.

Different Phasing Alternative

This alternative would evaluate the potential impacts from revising the phasing plan. This alternative would not result in any change to potential biological resources impacts; therefore, it would not reduce potential impacts associated with the Project.

3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

3.5.1 Introduction

This section of the DEIR describes the cultural and historical resources identified within the cultural study area, evaluates the potential effects that the Project may have on these resources, and identifies mitigation measures to address potentially significant impacts. The study area consisted of 730 acres in and around the Project site.

The primary sources used in this evaluation were the Cultural Resources Studies for the Riverbend Sand and Gravel Project, Fresno County, California prepared by Applied Earthworks, Inc. (Æ) in June 2012 and a Letter Report Addendum to the Cultural Resources Study prepared in October 2013. These documents are provided in Appendix F.

3.5.2 Environmental Setting

The following descriptions refer to cultural, historical and paleontological resources that may be found in the region, vicinity and on the Project site. Cultural resources consist of remains and sites associated with past human activities. These include prehistoric Native American archaeological sites, historic archaeological sites, and historic sites, buildings, structures or objects. They also include traditional cultural properties or areas such as Native American sacred sites that have been, and often continue to be, of special economic and/or religious significance.

Historical resources are generally those associated with periods of recorded history, often in connection with European settlement of North America. Some historical resource sites may also be of cultural significance to contemporary Native Americans or other ethnic groups because they contain objects or elements important to their cultural heritage. Significant historical resources and traditional cultural properties are afforded a measure of protection under existing Federal, State and local laws.

The Paleontological Resources Preservation Act (16 USC § 470aaa et seq.) defines a paleontological resource as any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth. For purposes of this evaluation, paleontological resources generally consist of vertebrate, invertebrate, and plant fossils that are usually found in sedimentary and metasedimentary deposits. They may include identified sites or geologic deposits containing individual fossils or assemblages of fossils. Paleontological resources do not include any materials associated with an archaeological resource.

3.5.2.1 Regional Setting

The Cultural Resources Study characterizes the Project setting in terms of the natural environment, described below, and local prehistory, ethnography and history (summarized in Section 3.5.2.2).

Regionally, natural conditions and resources have greatly influenced human occupation and resource utilization. The presence of archaeological and historic resources would generally be most likely along

rivers and streams and in other areas with ground cover or other features which could have invited and sustained habitation.

According to the Cultural Resources Study (Applied EarthWorks, 2012), the Project area lies on the eastern periphery of the San Joaquin Valley near the base of the Sierra Nevada foothills, adjacent to and east of the King's River. The San Joaquin Valley is the southern half of an elongated trough called the Great Valley, a 50-mile-wide lowland that extends approximately 500 miles south from the Cascade Range to the Tehachapi Mountains. Over 65 million years ago, the Great Valley served as a shallow marine embayment containing numerous lakes, primarily within the San Joaquin Valley. The gently sloping valley floor is filled with sediments derived from surrounding mountain ranges. As a result, the upper levels of the Great Valley floor are composed of alluvium and flood materials. Below these strata are layers of marine and nonmarine rocks, including claystone, sandstone, shale, basalt, andesite, and serpentine. Waters began to diminish about 10 million years ago, eventually dwindling to the drainages, tributaries, and small lakes that exist today. Remnants of the extinct lakes are currently used for agricultural activities in the valley.

The San Joaquin River is the prominent hydrologic feature that drains the southern half of the Great Valley into San Francisco Bay. Smaller east-west-trending rivers, like the Kings River, drain the Sierra Nevada range before converging on the San Joaquin River. This region of the San Joaquin Valley has supported an abundance of wildlife, riparian habitats and marshes. The Kings River and its smaller tributaries would have provided habitat for an abundance of food resources such as aquatic plants, fish, beaver, and other animals hunted prehistorically and historically.

3.5.2.2 Vicinity Setting

Cultural resources in Fresno County reflect the area's history of inhabitation by at least five indigenous Native American tribes; Spanish, Mexican, and American colonization; and periods of economic and social change such as those associated with the Gold Rush and development of agriculture and rail transportation. Extensive accounts of California and local prehistory, ethnography, and history are provided in Sections 2.2 (Cultural Setting) and 2.3 (Historic Context) of the Cultural Resources Study, which is provided in Appendix F of this DEIR and should be consulted for detailed information.

There are many archeological and historic sites and a large stock of historically significant buildings and landmarks in the County. As described in Section 3.5.5, AEC conducted various records searches to determine the presence of prehistoric or historic resources, including Native American cultural resources. The records search revealed that five cultural resources surveys have been completed within 0.5 mile of the Project site (see Table 4-1 of the Cultural Resources Study). One archaeological survey was conducted within the Project study area along Goodfellow Avenue in 1994.

The records search did not identify any formally recorded prehistoric or historic-era sites within the Project area. However, there is one site mentioned in the notes of Oscar Noren that occurs within the Project property boundaries, as described below and in Section 3.5.2.3. Four isolated prehistoric finds

(i.e., flaked stones) are located within 0.5 mile east of the Project site (see Table 4-2 of the Cultural Resources Study).

Local Prehistory

Based on numerous archaeological investigations conducted since the 1960s, it is recognized that the Yokuts occupied most of the San Joaquin Valley over a period extending as long as 2,000 years. The study area was occupied by the Wet-chi-kit Yokuts, one of the many autonomous tribes that made up the Northern Valley Yokuts. The Northern Valley Yokuts inhabited the marshy regions of the upper half of the San Joaquin Valley.

Prehistoric sequences developed from excavations provide a fairly clear understanding of culture change during the last 2,000–3,000 years; however, archaeological investigations in the Tulare Lake and Buena Vista Lake localities south of the Project vicinity suggest that people occupied the San Joaquin Valley as early as 11,000–12,000 years ago (Applied Earthworks, 2012). Archaeological evidence suggests that the valley's initial occupants settled in lakeshore and streamside environments utilizing the foothills periodically for seasonally available resources. These early Paleoindian sites are typified by fluted points, stemmed dart points, scrapers, and crescents. Subsequently in the middle and late Holocene, Archaic groups utilized a broader resource base, supplementing their subsistence with small game and hard seeds. Hand stones, milling slabs, mortars, and pestles are common in Archaic assemblages, as are atlatl dart points. Favorable climatic conditions between 3,000 and 3,500 years ago instigated widespread settlement along the western Sierran slopes.

Technological and social changes occurred during the late Holocene, including the adoption of the bow and arrow, expansion of trade, increasing use of acorns, and improved food storage techniques. As populations grew, social relations became more complex. Economic stress and social instability among many Sierran and foothill groups became more pronounced during a period of xeric climates between circa A.D. 450 and 1250. Thereafter, new levels of population growth were achieved, resulting in part from movement of new Sierran groups. By circa A.D. 1600–1700, most groups claimed the territories that would identify them ethnographically.

Although no archaeological excavations have taken place in the Project vicinity, local historian and amateur archaeologist Oscar Noren amassed an extensive collection of prehistoric artifacts during his more than 70 years as a Reedley/Kingsburg-area resident. Through his documentation of these recovered artifacts, Noren identified 20 habitation sites around the Reedley area. The Cultural Resources Study (2012) references a listing of these sites, including the Wet-chi-kit village of *Mosahau* located east of the Project site; *Wewayo*, located 5 miles northeast of Reedley; and an unnamed site designated as "Noren-76" located within the property boundaries but not on the Project site.

Detailed cultural descriptions are provided in Section 2.2.2 (Ethnography) of the Cultural Resources Study and are incorporated by reference.

Local History

With the gold rush in decline, most miners descended from the foothills and to pursue other professions. The town of Centerville, located north of the Project site along the Kings River, became an early agricultural and cattle center in the 1850s and 1860s. During this time, farms were generally located near a perennial water source. This constraint on early agriculture kept the valley's two major industries—farming and ranching—in balance. The successful development of irrigation systems led to the agricultural boom as more tracts of land became suitable for crops. As more fully explained in the Cultural Resources Study, the reasons for agricultural land proliferation in the Central Valley and Project vicinity; the economic drivers behind crop type selection; and the influence of the railroad in agricultural use and settlement patterns are pertinent to the establishment of the town of Sanger.

Sanger area farms were primarily family-owned operations. In the Project vicinity, much land east of the Kings River was owned by the Hanke family for over 50 years, beginning prior to the arrival of the railroad and prior to the development of the town of Sanger. Herman Hanke was a California pioneer, and the project area encompasses land that was previously owned by the Hanke family. The history of the Hanke family members and their landholdings in and around Sanger is provided in Section 2.3.6 (Project Area History) of the Cultural Resources Study and is incorporated by reference. Where on-site cultural resources relate to the Hanke family, that historical context is provided in Section 3.5.2.3 below.

Geology and Paleontological Sensitivity

The east side of the San Joaquin Valley, where the Project is located, is characterized by a broad plain of low relief consisting of large coalescing alluvial fans derived from streams draining from the Sierra Nevada. In the Project area, the gently sloping alluvial fans reach an elevation of more than 330 feet above sea level and can be characterized as broadly rolling with minor topographic relief consisting of small mounds and closed depressions, bisected by distributaries of the Kings River. The present surface of the valley floor is composed of mostly unconsolidated Pleistocene age (2.6 million years ago to 11,700 years before present) and recent sediments largely representing the alluvial, flood, and delta plains of the Sacramento and San Joaquin rivers, including the Kings River.

The Letter Report Addendum (Applied Earthworks, 2013) describes the Project area as underlain by the Modesto Formation (see Figure 3.5-1), which is Late Pleistocene in age and consists of poorly indurated fluvial and alluvial deposits and well-developed soils. Specifically, the sediments are composed of granitic sand, silt and gravel derived from the nearby Sierra Nevada. In the Project vicinity, the upper member of the Modesto Formation is exposed and is locally overlain by recent Holocene alluvial deposits. The upper member is composed of massive sand and gravel deposits where stratification was most likely destroyed by soil development. The lower member is predominately composed of moderately stratified sand and silt deposits.

The paleontological records search (Section 3.5.5) found that at least 27 fossil specimens representing plants, mammals, and reptiles have been recovered from the Modesto Formation from at least six documented vertebrate localities throughout the Central Valley. In 2006, a radius from *Bison* cf. *B.*

latifrons was discovered at the surface of an outcrop exposure in Fresno, approximately 25 miles from the Project site. The bison radius was deposited in the upper member of the Modesto Formation on the San Joaquin River alluvial fan, which is considered to be well within the expansive depositional paleoenvironment of the Project area. Other terrestrial vertebrate fossil specimens from Modesto Formation locations in the Central Valley include Jefferson's ground sloth (*Megalonyx jeffersoni*), bison (*Bison antiquus*), mammoth (*Mammuthus columbi*), camel (*Camelops*), snakes and rodents. Therefore, the Modesto Formation has the potential to yield paleontological resources in and around the Project site.

3.5.2.3 Project Site Setting

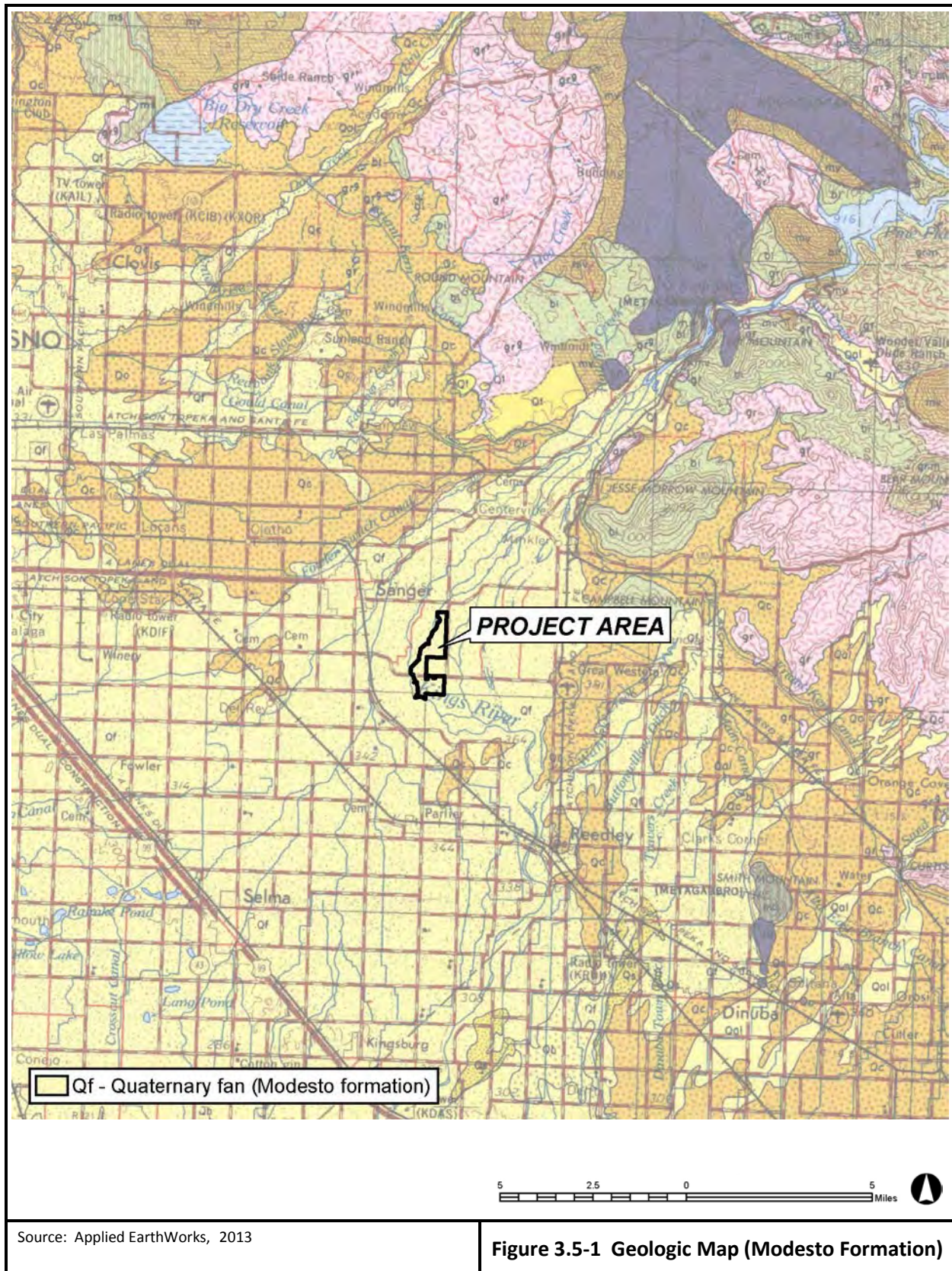
The Project is proposed on approximately 619 acres of an 833-acre property. To determine the potential presence of archaeological and historical resources, AEC conducted intensive pedestrian surveys on 730 acres in and around the Project site in 2011 (see Section 3.5.5). No Prehistoric archaeological sites or features were encountered within the Project site.

The Project site is primarily flat and is dominated by grape vineyards, an olive orchard, and a walnut orchard. It consists of seven parcels. Two of the southernmost parcels are solely occupied by agricultural crops and irrigation systems. The five remaining parcels have agricultural crops and irrigation systems, as well as structures. The Project area lies on the alluvial floodplain of the Kings River, which was routinely inundated with water and covered with water-born sediments prior to the river being dammed. Due to this hydrologic history, water-worn cobbles are common throughout, and river sands are prevalent along the western side of the Project site. Portions of the Project site have been previously leveled, as well as plowed, and it is possible that some cultural material was moved as a result.

The following sections describe the resources observed and recorded during the pedestrian surveys.

Archaeological Resources

AEC's archaeological survey resulted in the identification of two archaeological sites on or near the Project site: 1) prehistoric archaeological site CA-FRE-3591/P-10-005976, which is in the vicinity of Noren-76, and 2) historic-era trash scatter CA-FRE-3590H/P-10-005972. Both sites are excluded from mapping for confidentiality and resource protection purposes.



CA-FRE-3591 (P-10-005976, Noren-76)

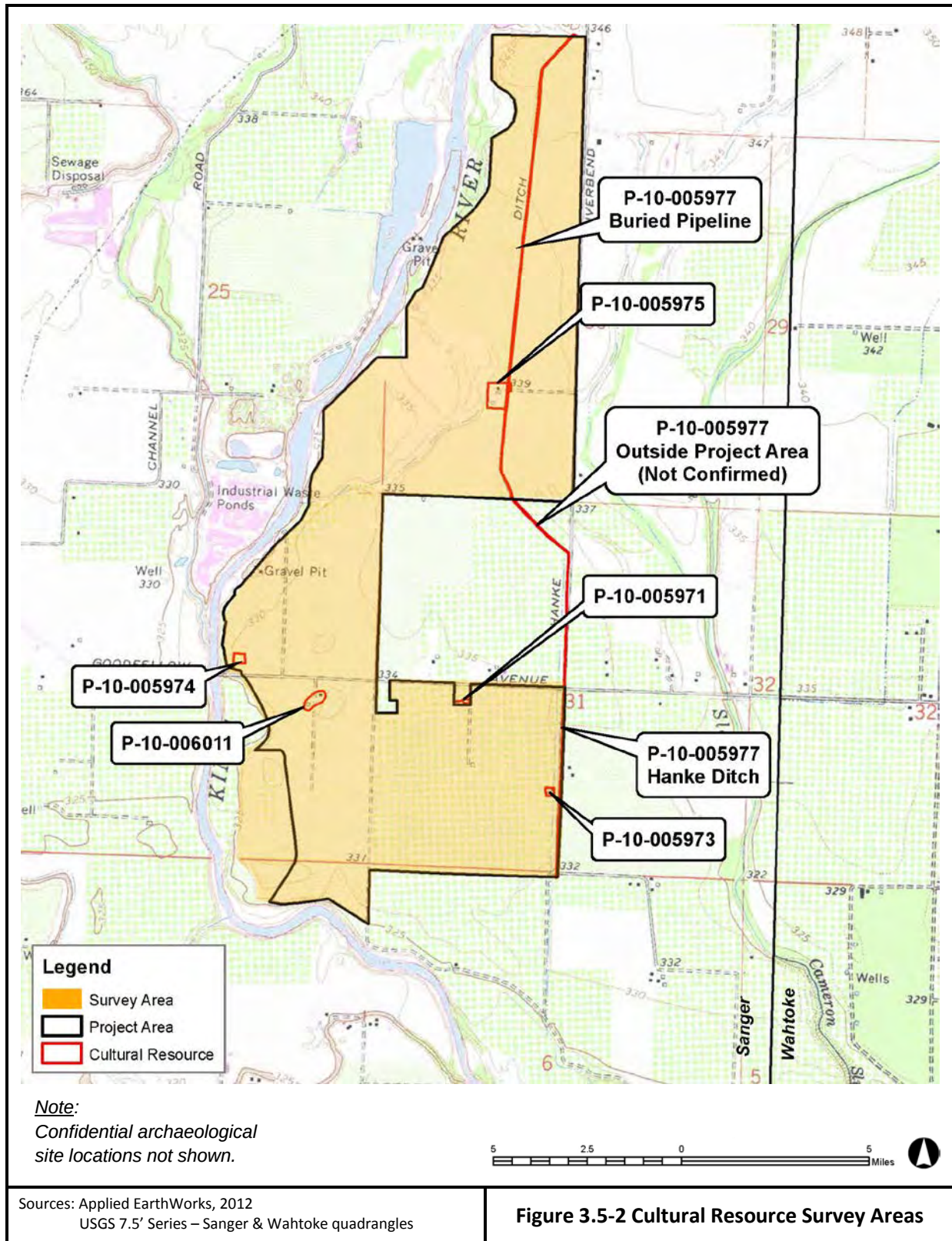
As noted previously, the unnamed site designated as “Noren-76” was discovered in the 1930s but never formally recorded. Oscar Noren’s notes described it as a prehistoric site with granite, obsidian, steatite and basalt artifacts, bone fragments, and brownware sherds.

Now designated as CA-FRE-3591, the prehistoric site was investigated during AË’s pedestrian survey. Although CA-FRE-3591 is adjacent to the Project site, it is not within the Project site. The survey identified seven late-stage obsidian reduction flakes; an edge-modified cobble fragment (possible scraper); a granite cobble pestle; and a turtle shell fragment sparsely distributed in an approximately 1,750 square meter area. The flakes and cobble fragment were observed at the edge of a modified terrace overlooking the Kings River, and the pestle was discovered less than 80 meters farther east.

To define the horizontal extent of CA-FRE-3591, AË excavated 34 shovel test pits, 20 of which yielded cultural materials. Artifacts identified include 37 pieces of debitage (33 obsidian, 3 basalt, 1 quartzite), 1 chert biface fragment, 1 glazed white ceramic bead, 1 historical metal fragment, and 26 pieces of animal bone (primarily rodent). The majority of artifacts were recovered from within the upper 20 centimeters of sediment; however, a few artifacts were found as deep as 80–100 centimeters below the surface. Most units of the excavated profile showed evidence of rodent disturbance, and the fact that artifacts were found to depths of a meter suggest that sediments likely have been mixed vertically. Site sediments have also been moved around horizontally. Historically, the area has been subject to artificial leveling in efforts to make the ground better suited to agriculture. Evidence of such modification is apparent by the unnaturally level ground surface in the central and northern portions of CA-FRE-3591. It is possible that the site once rested on top of a higher mound, which has since been lopped-off and leveled for agriculture.

Based on the surface and subsurface distribution of cultural materials, the site’s dimensions appear to be roughly 660 meters (north-south) by 200 meters (east-west).

The site’s location and observed cultural material, while sparse, is diverse enough to suggest that it represents the disturbed remains of a larger, denser site, and further bolsters the conclusion that it is the same site Oscar Noren recorded in the 1930s (Noren-76). Based on Noren’s notes and the results of subsurface investigation, the site appears to have had an artifact assemblage consistent with a residential site, with ground stone and flaked stone artifacts, beads, and pottery. Ethnohistoric accounts from the area describe the Kings River and adjacent terraces as rich resource gathering areas for basket materials and dietary resources. There were several large ethnographic villages located in this area.



CA-FRE-3590H (P-10-005972)

CA-FRE-3590H is a historic-era archaeological site consisting of a scatter of glass shards and ceramic sherds, metal fragments, and miscellaneous refuse that appears to have been deposited in the field and burned. None of the items have historic makers' marks. Recent garbage is also present within the site, suggesting post-depositional contamination. This site is thought to predate 1962 because the treatment of the material (burned glass and ceramic) is consistent with historic-era garbage disposal practices and also because the site is near the locations of three houses that predate the 1960s.

Architectural Resources

The Project site encompasses four building complexes, two of which are located north of Goodfellow Avenue and two to the south. Three of these structures and associated outbuildings were built before 1980. The fourth is a mobile home brought onto the Project site in 2011. The Hanke Ditch is also located on the Project site. The inventoried resources (P-10-005974, P-10-005975, P-10-005977, P-10-005973, and P-10-006011) are described in detail in the Cultural Resource Studies. An additional structure (P-10-005971) is located adjacent to but outside of the Project site and will not be directly impacted by Project activities. It was determined that none of these areas are considered significant cultural resources (Section 3.5.6.2). Figure 3.5-2 shows the cultural resource survey areas and the locations of the inventoried resources.

3.5.3 Regulatory Setting**3.5.3.1 Federal**

The National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. § 470 et seq.), as amended is the center piece for historic preservation. This Act established the NRHP which serves as the nation's inventory of districts, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. A historic property is a cultural resource that is eligible for listing in the National Register of Historic Places (NRHP). The NRHP significance criteria applied to evaluate the cultural resources are defined in 36 CFR Section 60.4 as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and,

- 1. That are associated with events that have made a significant contribution to the broad patterns of our history; or*
- 2. That are associated with the lives of persons significant in our past; or*
- 3. That embody the distinctive characteristics of type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or that represent the work of a master, or that possess high artistic values,*

4. *That has yielded, or may be likely to yield, information important in prehistory or history.*

Section 106 of the NHPA prescribes specific criteria for determining whether a project would adversely affect a *historic property*, as defined in 36 Code of Federal Regulations (CFR) Section 800.5. An impact is considered significant when prehistoric or historic archaeological sites, structures, or objects listed in or eligible for listing in the NRHP are subjected to the following adverse effects:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property that is not consistent with the Secretary's standards for the treatment of historic properties (36 CFR Part 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property that causes its deterioration; and
- Transfer, lease, or sale of the property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

3.5.3.2 State

The California Public Resources Code Sections 5020-5029 (inclusive) provide the regulatory framework for State agencies regarding the inventory, evaluation and protection of historical properties and resources of significance. The Code states:

"No state agency shall alter the original or significant historical features or transfer, relocate, or demolish historical resources on the master list maintained pursuant to subdivision (d) of Section 5024 without (early in the planning process) first giving notice and a summary of the proposed action to the State Historic Preservation Officer (SHPO) who shall have 30 days after receipt of the notice and summary, to review and comment." (Public Resources Code §5024.5a)

Resources listed in, or determined to be eligible for listing in, the CRHR are resources that are required to be given consideration in the CEQA process. A resource listed in, or eligible for listing in, the CRHR is presumed to be historically or culturally significant: this includes listed archaeological resources. The CRHR is an authoritative guide to the State's historical resources, and listed properties are considered significant for purposes of CEQA. The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts), or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be significant resources for purposes of

CEQA, unless a preponderance of evidence indicates otherwise (Pub. Resources Code §§ 5024.1, 21084.1, 14 CCR § 15064.5).

However, a resource does not need to have been identified previously either through listing or survey, to be considered significant under CEQA. In addition to assessing whether historical resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project's impacts to historical resources (Pub. Resources § 21084.1, 14 CCR § 15064.5(3)). Generally, a resource will be considered by the lead agency to be "historically significant" if it meets the criteria for listing on the CRHR (Pub. Resources Code §5024.1, Title 14 CCR 4852) including the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

Historic resources eligible for listing in the CRHR must meet one of the criteria of significance described above, and like the NRHP, must retain enough of their historic character to be recognizable and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a resource is proposed for eligibility. Alterations over time to a resource or historic changes in its use may themselves have historical, cultural, or architectural significance. It is possible that historical resources may not retain sufficient integrity to meet the criteria for listing in the NRHP, but they may still be eligible for listing in the CRHR. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR, if it maintains the potential to yield significant scientific or historical information or specific data.

Archeological Resources: Section 15064.5 of CEQA Guidelines sets forth the requirements for the analysis of archaeological resources in determining whether a project will have a substantial effect on the significance of resources. It also specifically addresses those resources determined to be eligible by the State Historical Resources Commission for listing on the CRHR. There are provisions for the identification of resources on local registers, these provisions require public agencies to treat those resources as significant.

Human Remains: In accordance with California Health and Safety Code Section 7050.5 (b), if human remains are discovered during ground disturbing activities, the County Coroner must be notified. Section 7050.5 (b) states that *"there shall be no further excavation or disturbance of the site or any nearby area reasonably expected to overlie adjacent remains"* until the coroner has made certain

determinations as required by California Government Code, commencing with Section 27460. Health and Safety Code Section 7050.5 (c) states: "If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC)."

Upon notification by the coroner, the NAHC must comply with Public Resources Code § 5097.98:

- (a) Whenever the commission receives notification of a discovery of Native American human remains from the county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code:*
 - 1. It shall immediately notify those persons it believes to be most likely descended from the deceased Native American.*
 - 2. The descendants may, with the permission of the owner of the land, inspect the site of the discovery of the Native American human remains and recommend means for treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods. The descendants shall complete their inspection and make recommendations or preferences for treatment within 48-hours of being granted access to the site.*
- (b) Upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section, with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.*

3.5.3.3 Local

Fresno County General Plan (2000)

The Fresno County General Plan includes goals and policies directed toward protecting cultural and paleontological resources in the County. Policies in the Open Space and Conservation Element seek to preserve the historical, archeological, paleontological, and cultural resources of the County through development review, acquisition, encouragement of easements, coordination with other agencies and groups, and other methods. Select goals and policies relevant to this analysis are listed below.

GOAL OS-J: To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment.

Policy OS-J.1: The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archaeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archaeological and historic resources, and provisions for resource recovery and preservation when displacement is unavoidable.

Policy OS-J.2: The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the location of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

Policy OS-J.3: The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.

Policy OS-J.5: The County shall support the registration by property owners and others of cultural resources in appropriate landmark designations (i.e., National Register of Historic Places, California Historic Landmarks, Points of Historical Interest, or Local Landmark).

Program OS-J.A: The County shall adopt and implement an ordinance to protect and preserve significant archaeological, historical, and geological resources. The ordinance shall provide for implementation of applicable development conditions, open space easements, tax incentives, related code revisions and other measures as needed. (Policy OS-J.1)

Fresno County Code of Ordinances

Title 15 of the County Code of Ordinances briefly defines a historical building (§15.04.160) as “a structure, or a part thereof, that has been declared a historical monument by the appropriate local, state or federal agency.” The Code requires that construction on historical buildings comply with the applicable provisions of the California Historical Building Code, Part 8, Title 24, California Code of Regulations.

3.5.4 Significance Thresholds

3.5.4.1 Appendix G Thresholds from the State CEQA Guidelines

Appendix G of the State CEQA Guidelines provides thresholds of significance for determining whether a project could have a significant effect on the environment. According to Appendix G, a project could have a potentially significant impact on cultural and paleontological resources if the project would:

- a) *Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 of the State CEQA Guidelines.*
- b) *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the State CEQA Guidelines.*
- c) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.*
- d) *Disturb any human remains, including those interred outside of formal cemeteries.*

3.5.4.2 Additional Thresholds of Significance

Requirements identified in the County policies and plans are addressed by the significance criteria above. There are no additional thresholds of significance related to the topical environmental issue.

3.5.5 Methodology of Analysis

This analysis is based on the review of applicable Federal, State and local requirements, Project design features, BMPs, operating practices and other environmental protection measures that have been incorporated into the Project to minimize potential impacts on the environment, review of the environmental evaluation of similar projects in the area and comments received during the scoping process.

Scoping letters that contained specific concerns regarding cultural resources included, but were not limited to the following letters:

- Letter from the Native American Heritage Commission, August 28, 2013; and
- Letter from the Traditional Choinumni Tribe, August 28, 2013

A copy of the Scoping Report which includes all the comment letters is provided in Appendix A

Impacts to cultural resources are assessed based on the potential for a project to adversely affect existing known and unknown historic and archaeological resources. This requires an analysis of whether there are significant historical resources on-site, and whether the project would result in a substantial adverse change (i.e., physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings) in the significance of a resource. The significance of historical resources is defined in Section 3.5.4.

Æ is an archaeological and cultural resources management firm employing registered professional archaeologists, architectural historians, and paleontologists. Æ prepared the Cultural Resources Study based on accepted professional practices and standards in the fields of archaeology and architectural history. The Cultural Resource Study was completed under the provisions of Public Resources Code Section 5024.1, Sections 21083.2 and 21084.1 of CEQA, and Section 15064.5 of the State CEQA Guidelines. The format of the report follows *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Office of Historic Preservation 1990). The Study included records searches to identify previously recorded sites and surveys; a Sacred Lands File search by the NAHC;

California Native American Consultation; a pedestrian survey to identify archaeological and architectural resources; and subsurface boundary testing at one archaeological site. The Study provides documentation and evaluation of cultural resources for eligibility to the California Register of Historical Resources.

Æ's paleontological resource analysis methodology (i.e., records search) is described in Section 3.5.5.

Cultural Records Searches

Prehistoric or Historic Resources

To determine whether prehistoric or historic resources were previously recorded within the Project area, Æ performed a cultural resources records search for the Project area in August 2011 at the California Historical Resources Information System's (CHRIS's) Southern San Joaquin Valley Information Center (SSJVIC) at California State University, Bakersfield. The search included a review of all recorded historic and prehistoric cultural resources, as well as a review of known cultural resources, and survey and excavation reports generated from projects located within one-half mile of the Project Site. Also reviewed were the National Register of Historic Places (National Register), the California Register of Historical Resources, and documents and inventories from the California Office of Historic Preservation including the lists of California Historical Landmarks, California Points of Historical Interest, Historic Property Data File, and the Inventory of Historic Resources.

Æ also conducted research at the map room of the Henry Madden Library at California State University, Fresno, and the California Room of the Main Branch of the Fresno County Public Library to identify historic buildings or features known to have existed within the project area. Historical and archival research on the City of Sanger was conducted at the Sanger Branch and the Central Branch of the Fresno County Library, the Sanger Depot Museum, the Fresno County Assessor's and Recorder's offices, and by the SSJVIC at California State University, Bakersfield. In addition to the listing cited previously, information sources included newspaper articles from the Sanger Herald, Sanborn Fire Insurance maps, and Fresno County plat maps.

Traditional Cultural Resources

Æ contacted the Native American Heritage Commission (NAHC) in September 2011 requesting a Sacred Lands File search and Native American contacts list. The NAHC Sacred Lands Inventory did not indicate the presence of Native American cultural resources at or within ½ mile of the Project site. The NAHC provided a list of affected Native American tribal contacts, which was used to inquire whether any tribe or individual has knowledge of cultural resources in the vicinity that might be of religious and/or cultural significance to the tribal communities.

In September 2011, Æ also sent letters to the contacts provided by the NAHC and subsequently received written communication from the Native American contact for the Choinumni Tribe (Choinumni/Mono) indicating that the project area should be considered sensitive for prehistoric archaeological resources due to its cultural history and the likelihood of subsurface cultural material. No other Native American

contacts responded regarding the presence of Native American sacred lands or traditional cultural properties within the immediate Project area.

Field Surveys

Archaeological Surveys

From September 6 through 13, 2011 Æ conducted an intensive pedestrian survey covering 730 acres of the 833-acre property where the Project site is located. Those 730 acres comprise the cultural “study area” and include the limits of the 619-acre proposed mining and processing operation, as well as approximately 111 acres adjacent to the Kings River known to contain cultural artifacts.

During the survey, Æ used transects varying from 10 to 15 meters, depending on the degree of obstruction encountered. Ground visibility was generally good, but variable depending on the density of vine growth in the vineyards and the types and spacing of trees in the orchards. Ground visibility usually averaged between 50 and 70 percent, but was as low as 30 percent among dense grape vines or as high as 90 percent in the walnut orchard on the eastern side of the project area.

During the cultural resource pedestrian survey, Æ archaeologists examined the study area for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., postholes, foundations) or historic debris (e.g., metal, glass, ceramics). Results of the cultural field survey are summarized in Section 3.5.2.3.

Architectural Surveys

Æ conducted architectural field surveys in November and December 2011. The surveys included visiting extant structures, photographing the properties, and recording data on forms developed by the California Department of Parks and Recreation (DPR). Results of the architectural field survey are summarized in the Cultural Resources Study (Appendix F).

Archaeological Testing

Subsurface boundary testing was performed at the prehistoric site to determine the site’s areal extent. Subsurface investigations were intended to find the resource’s boundary relative to the Project boundaries. Boundary definition procedures and techniques are described in Section 3.4 of the Cultural Resources Study. Upon completion of excavation, test units were backfilled and the area was restored to its original contour.

Paleontological Resource Records Search

Æ performed a paleontological records search to identify previously documented fossil locales in the project vicinity. For this project, Æ’s paleontologist reviewed the University of California Museum of Paleontology’s (UCMP) online database, which contains paleontological records for Fresno County. The records search results are summarized in Section 3.5.2.2.

Project Design Features, BMPs and Environmental Protection and Minimization Measures

As discussed above and in Section 2.3.17, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project to minimize potential impacts on the environment. The environmental protective measures that were considered during this evaluation include, but are not limited to, the following:

- An activity exclusion zone around CA-FRE-3591 (P-10-005976) would be established and maintained prior to the start of Phase 8B excavation, which is estimated to commence in the year 2075. The Project would establish a 50-foot exclusion zone beyond the CA-FRE-3591 site boundary to ensure that all construction equipment, personnel, and activities remain outside the site boundary. Prior to the removal of overburden in Phase 8B, the boundaries of CA-FRE-3591, including a 50-foot exclusion zone, would be staked and fenced. Signs would also be posted every 200 feet stating that no mining operations shall occur beyond the staked area.
- The open portion of the Hanke Ditch (south of Goodfellow Avenue) would remain intact and would not be disturbed by mining. All mining and surface disturbance activity in and adjacent to Phases 6A and 7 would be set back 25 feet from the property line, thus completely avoiding the open portion of the ditch.

Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

If materials from Phases 6A, 6B and 7 were to be processed at the CUP 3052 plant (Section 2.2.15.7), the relocation of a conveyor within the Project site would not create any different or additional effects on cultural and paleontological resources.

3.5.6 Project-Level Impacts and Mitigation Measures**3.5.6.1 Issues Found to Have No Impact**

All identified thresholds and potential effects were evaluated as described in Section 3.5.6.2.

3.5.6.2 Historical Resources**Impact Statement**

Impact CPR-1: Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? **(CEQA Guidelines Threshold Criteria (a))**

Impact Analysis***Removal of Structures and Facilities***

Over the next 60 years, the Project would require the removal of four building complexes, two of which are located north of Goodfellow Avenue and two to the south. The existing on-site segment of the Hanke buried pipeline north of Goodfellow Avenue would also be removed. Each resource is listed below by estimated year of removal, mining phase, location, and historic architectural assessment reference.

Year 2019, Phase 1B excavation

Demolition/removal of P-10-005974 at 14684 E. Goodfellow Ave. (APN 332-071-53), including:

- Historic residence constructed circa 1890;
- Two-story tank house likely constructed circa 1890 and altered for living space or storage;
- Two-car garage; and
- Chicken coop.

Year 2028, Phase 3A excavation

Demolition/removal of P-10-005975 at 3677 S. Riverbend Ave. (APN 333-160-01S), including:

- Two-story residential dwelling constructed in 1910;
- Metal storage shed constructed in the late 1970s to early 1980s; and
- Monitor roof barn constructed between 1947 and 1950.

Year 2028, Phase 3A excavation, proceeding north through Phase 4A (2040)

Demolition/removal of P-10-005977 (Hanke buried pipeline) and relocation as an open ditch connecting to existing open Hanke Ditch, which begins approximately 800 feet south of parcel 33316001S and extends south along Riverbend Avenue past the Project site, rejoining the Kings River approximately 0.5 mile south of the Project site. The buried pipeline was constructed during the late 1970s or early 1980s.

The off-site portion of Hanke buried pipeline (P-10-005977, location not confirmed) would have to be decommissioned and abandoned in conjunction with the removal of the on-site segment and construction of the new 1.4-mile (approximately 7,400 feet) open Hanke Ditch segment.

Year 2062, Phase 7 excavation

Demolition/removal of P-10-005973 at 4745 S. Riverbend Ave. (APN 333-061-05), including:

- Residential dwelling constructed after 1920;
- Pump house; and
- Nut processing shed constructed between 1947 and 1950.

Year 2075, Phase 8B excavation

Demolition/removal of P-10-006011 at 14865 E. Goodfellow Ave. (APN 332-071-52), including:

- Double-wide portable dwelling moved onto the parcel in 2011 (1916 residential dwelling was demolished in 2011);
- Metal ranch shop likely constructed between 1947 and 1950;
- Metal implement shed;
- Pump house; and
- Two portable office trailers.

The property owner who has leased the property to the mine operator owns the four building complexes that would be removed during the life of the mine, including three single-family dwellings

and one mobile home. With mining starting at the western boundary, and the plant site centrally located in the Project site, one residence would be removed prior to 2019. The remaining homes and buildings would be removed as mining progresses toward their location.

As described previously in Section 3.5.4 (Significance Thresholds), CEQA Guidelines Section 15064.5 establishes rules for the analysis of cultural (archaeological and historical) resources in order to determine whether a project may have a substantial adverse effect on the significance of these resources. According to Section 15064.5(b), a *substantial adverse change* is defined as:

- *Physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired; or*
- *Demolition or material alteration of the physical characteristics that convey the resource's historical significance and justify its designation as a historical resource.*

Since all resources listed above would ultimately be demolished or removed, Æ evaluated the significance of the historical architecture and archaeological discoveries against the eligibility criteria of the California Register (Section 3.5.4). Table 3.5-1 provides a summary assessment of historic architectural impact significance for each of the built environment resources discussed both individually and collectively in Chapter 5 of the Cultural Resources Study.

In summary, none of the buildings are associated with important individuals or trends in history or discrete events; they do not represent the works of a master; they are not particularly representative nor outstanding examples of a style of architecture; and they cannot provide data important to the study of history not easily attainable from other sources. Resources P-10-005973, P-10-005974, P-10-005975, P-10-005977, and P-10-006011 all fail to meet the eligibility criteria for the California Register. Moreover, the Cultural Resources Study states that all assessed resources were assigned NRHP Status Code 6Z, signifying that they are found ineligible for the National Register, California Register or Local designation through survey evaluation. No further action was recommended by Æ for the management of these resources.

Table Error! No text of specified style in document.-1. Historic Resource Evaluation Summary

Site	Type	Preliminary Recommendations
P-10-005973	Residence and packing house	Not eligible for California Register; no recommendations.
P-10-005974	Residence and outbuildings	Not eligible for California Register; no recommendations.
P-10-005975	Residence and barn	Not eligible for California Register; no recommendations.
P-10-005977	Hanke Ditch	Not eligible for California Register; no recommendations.
P-10-006011	Portable dwelling and metal outbuildings	Not eligible for California Register; no recommendations.

Source: Applied EarthWorks, 2012

Level of Significance Before Mitigation

Less than significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable

3.5.6.3 Archaeological Resources**Impact Statement**

Impact CPR-2: Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? **(CEQA Guidelines Threshold Criteria (b))**

Impact Analysis

Based on the records search (Section 3.5.2.2) and field survey results (Section 3.5.2.3), the Project would not cause significant adverse impacts to known cultural resources on the Project site; therefore, no additional cultural resources work is recommended for areas proposed mining and ancillary activity areas. However, site CA-FRE-3591 (P-10-005976) is adjacent to the Project site and is analyzed below.

CA-FRE-3591 (P-10-005976, Noren-76)

Site FRE-3591 is not on the Project site and an activity exclusion area of 50 feet between the Project activities and site FRE-3591 will be maintained as part of the Project design features and BMPs. This will serve to protect site FRE-3591 from accidental encroachment by mining activities, personnel and equipment. Due to this exclusion and avoidance of site CA-FRE-3591, a formal evaluation of the resource's eligibility for listing on the California Register was not necessary and was not conducted.

CA-FRE-3591 is currently located within a vineyard, and it is assumed that the land will continue to be used for agriculture as the Project progresses. Delineating the boundary of CA-FRE-3591 with permanent markers or exclusionary fencing immediately upon project commencement is impractical, as any marker of sufficient size and durability would interfere with ongoing agricultural operations. The cultural resources consultant, Æ, instead recommends that the site marking be delayed until the start of Phase 8B construction, as reflected in Mitigation Measure CPR-1 below. With the implementation of Mitigation Measure CPR-1, potential impacts to this cultural resource will be less than significant.

Given the evidence of cultural resource sensitivity on-site, the possibility exists that cultural resources could be discovered during construction grading, trenching, augering, and/or excavation work. In such an instance, work must be halted in the immediate area and a qualified archaeologist notified to evaluate the resource(s) encountered and to recommend the development of mitigation measures for potentially significant resources consistent with CEQA Guidelines Section 15126.4(b). With

implementation of Mitigation Measures CPR-2 and CPR-3, potential impacts to cultural resources will not exceed a level of significance.

CA-FRE-3590H (P-10-005972)

The Cultural Resources Study has determined that CA-FRE-3590H is not eligible for listing on the California Register. No further action is recommended for this resource.

Level of Significance Before Mitigation

Potentially Significant

Mitigation Measures

Mitigation Measure CPR-1:

Prior to commencement of Phase 8B, markers shall be placed at the geographic boundary coordinates delineating the 50-foot exclusion zone surrounding site CA-FRE-3591 to prevent disturbance by project activities. It is inappropriate to prescribe a specific type of markers at this time, as technological changes over the next 60 years may result in fencing/marker options not currently available. However, the markers shall fulfill the following purpose: (1) provide a clear visual indicator of the exclusion zone and (2) prevent the entry of unauthorized equipment, vehicles, and mine personnel into the exclusion zone. To facilitate the identification and delineation of the boundary and 50-foot exclusion zone for CA-FRE-3591, the site shall be surveyed and Universal Transverse Mercator (UTM) geographic coordinates provided to the County.

Mitigation Measure CPR-2:

The Project Applicant shall obtain the services of a qualified cultural and paleontological consultant to implement an education program to ensure that construction personnel are aware of potentially sensitive archaeological and paleontological resources.

Mitigation Measure CPR-3:

If any subsurface cultural resources, including either prehistoric or historic resources, are encountered during construction of the Project, all construction activities in the vicinity of the encounter shall be halted until a qualified archaeologist can examine these materials and make a determination of their significance. Such finds include, but are not limited to, prehistoric grinding implements, stone tools, soapstone bowls, and ornaments (e.g., beads, pendants) as well as intact building foundations and high concentrations of historical artifacts. The Fresno County Department of Public Works and Planning shall be notified, and the owners, developers and/or successors-in-interest shall be responsible for mitigation of any significant cultural resources pursuant to the CEQA Guidelines.

Level of Significance After Mitigation

Less Than Significant

3.5.6.4 Paleontological Resources**Impact Statement**

Impact CPR-3: Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? **(CEQA Guidelines Threshold Criteria (c))**

Impact Analysis

The Geology and Paleontological Sensitivity discussion in Section 3.5.2.2 (*Vicinity Setting*) states that the Modesto Formation has the potential to yield paleontological resources. Although the Project site has long been surficially disturbed for agricultural use and no fossils were identified during the cultural resources field surveys, the potential exists for discovery of paleontological resources during project-related earth-moving and excavation activities. Direct or indirect destruction of a unique paleontological resource or site would be a significant adverse impact. There are no Project design features or Protection Measures applicable to paleontological resources. With implementation of Mitigation Measure CPR-4, potential impacts to paleontological resources will not exceed a level of significance.

Level of Significance Before Mitigation

Potentially Significant

Mitigation Measures***Mitigation Measure CPR-4:***

If paleontological resources are discovered during project-related activities, the find shall be reported immediately to the County of Fresno Planning Department, who shall provide direction to contact a paleontological monitor. The area of the find shall be avoided until the monitor is on-site. The monitor shall assess the find and make any necessary recommendations, including any procedures to further investigate or mitigate impacts to the find as required by law.

Level of Significance After Mitigation

Less than significant

3.5.6.5 Human Remains**Impact Statement**

Impact CPR-4: Would the Project disturb any human remains, including those interred outside of formal cemeteries? **(CEQA Guidelines Threshold Criteria (d))**

Impact Analysis

There was no surface evidence of human remains during Æ's field survey of the Project site, including prehistoric archaeological site CA-FRE-3591. Although unlikely, the discovery of human remains is always a possibility. California Health and Safety Code Section 7050.5 addresses that possibility, stating that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric, the Coroner must notify the NAHC, which will determine and notify a Most Likely Descendent (MLD). The MLD shall complete the inspection of the site within 24 hours of notification, and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. With the implementation of Mitigation Measures CPR-5 and CPR-6, potential impacts to this cultural resource will be less than significant.

Level of Significance Before Mitigation

Potentially significant

Mitigation Measures**Mitigation Measure CPR-5:**

In the event that unanticipated human remains are discovered, work shall immediately stop at the discovery location and any nearby area reasonably suspected to overlie adjacent human remains. The Fresno County Coroner shall immediately be contacted to determine whether the cause of death must be investigated. If the coroner has reason to believe that the remains are of Native American origin, he or she will contact the NAHC by telephone within 24 hours (H&SC §7050.5). At the same time, the mine operator shall immediately notify the Fresno County Department of Public Works and Planning, and a qualified archaeologist shall be contacted to evaluate the archaeological implications of the find.

Mitigation Measure CPR-6:

The CEQA Guidelines (§15164.5) detail steps to be taken when human remains are found to be of Native American origin. If Native American remains are discovered, the operator/landowner shall work with the NAHC to develop and execute an agreement between themselves and the most likely descendant(s) of Native Americans who may be buried in the vicinity by which the human remains and associated burial items shall be treated or disposed, with appropriate dignity. The NAHC and landowner shall follow prescribed steps in Public Resources Code §5097.98, which include but are not limited to the following:

- The NAHC shall notify those persons it believes to be the most likely to have descended from the deceased Native American.

- The most likely descendant(s) may recommend to the landowner the means of treating and disposing of, with appropriate dignity, the human remains and any associated grave goods.
- The landowner shall ensure the immediate vicinity of the Native American human remains is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations.

Level of Significance After Mitigation

Less Than Significant

3.5.7 Cumulative-Level Impacts and Mitigation Measures

Would the Project, when considered in conjunction with other cumulative projects:

- *Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? (CEQA Guidelines Threshold Criteria (a))*
- *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (CEQA Guidelines Threshold Criteria (b))*
- *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (CEQA Guidelines Threshold Criteria (c))*
- *Disturb any human remains, including those interred outside of formal cemeteries? (CEQA Guidelines Threshold Criteria (d))*

The geographical context for the analysis of potentially cumulative impacts to cultural resources is the geographical area where the Project is located and includes the cities of Sanger and Reedley and the surrounding unincorporated areas of Fresno County.

Impacts to cultural and paleontological resources are site-specific, yet the destruction and/or loss of such resources could be cumulatively significant if not collectively addressed by individual projects. All the cumulative projects are required to comply with the same local, State, and Federal regulations as the Project. The County General Plan includes policies requiring the identification and mitigation of cultural and paleontological resources on a project-by-project basis as a means of protecting those resources countywide. Therefore overall cumulative impacts associated with cultural resources and paleontological are considered less than significant.

The Project design features, BMPs and mitigation measures would prevent impacts to cultural and paleontological resources from becoming significant at the project level. Therefore, the Project's contribution would also be cumulatively less than considerable. No additional mitigation measures are necessary.

For these reasons, the Project would not contribute to cumulatively significant impacts related to cultural and paleontological resources.

3.5.8 Alternatives to Significant Effects

No Project Alternative

The No Project Alternative would avoid all Project-related impacts to known cultural resources and potential (i.e., undiscovered) cultural and paleontological resources. It is unknown at this time how the No Project Alternative would address preservation of the known extent of the archaeological site (CA-FRE-3591), which was investigated as part of the Cultural Resources Study. Although CA-FRE-3591 is not within the Project site, it is on the project property and cannot be disturbed without first conducting a formal evaluation of the resource's eligibility for listing on the California Register and, if necessary, the significance of any proposed disturbance.

Reduced Annual Production Alternative

This alternative would evaluate the potential impacts from artificially limiting the proposed production by a given amount. Cultural and paleontological resource impacts would not change from those described for the Project because the impacts are evaluated in relation to proposed disturbance areas and the potential to affect known and unknown resources.

Reduced Project Size Alternative

This alternative would evaluate the potential impacts from artificially reducing the Project footprint by some stated amount. Reducing the footprint would minimize the extent that the ground is disturbed through excavation and Project activities. However, since the Project BMPs and mitigation measures already reduce impacts associated with these activities to less than significant this alternative would not significantly reduce potential impacts.

Reduced Mining Depth Alternative

This alternative would evaluate the potential impacts from artificially reducing the mining depth by some stated amount. Cultural and paleontological resource impacts would have little or no change from those described for the Project because the impacts are evaluated in relation to proposed disturbance areas and the potential to affect known and unknown resources. All known surficial and near-surface resources would be the same as for the Project. Reducing the mining depth would not preclude impacts to unknown (subsurface) resources that might be discovered because those resources would likely occur within the first several meters of excavation.

Different Phasing Alternative

This alternative would evaluate the potential impacts from revising the phasing plan. Other than perhaps changing the timing for implementation of prehistoric archaeological site (CA-FRE-3591)

protection and avoidance measures, re-phasing the Project would not have any effect on cultural or paleontological resource impacts.

3.6 GEOLOGY AND SOILS

3.6.1 Introduction

This section describes the local and regional geologic, soils, and seismic conditions that occur in the vicinity of and at the Project site. It presents an analysis of potential impacts related to soil disturbance, slope stability and seismic hazards.

Much of the information in this section was derived from Geotechnical Review of Quarry Slope Stability and Geologic Hazards, Proposed Riverbend Sand and Gravel Quarries (Tetra Tech, 2013), Geology and Soils Memorandum (SLR, 2013) and Slope Stability Considerations, (Tetra Tech, 2014). Copies of these documents are included in Appendix G.

3.6.2 Environmental Setting

3.6.2.1 Regional Setting

The Project site is located in the Great Valley of California which is an alluvial plain about 50 miles wide and 400 miles long (north-south). The Great Valley was formed by millions of years of alluvial and fluvial deposition of Quaternary sediments derived from the Sierra Nevada and Coast Ranges, which bound the Great Valley on its east and west. The Great Valley Sediments have been deposited in the valley for the last 160 million years, and can range up to more than 50,000 feet thick in certain areas. In general, coarse sediments have been deposited in areas nearest the mountains, and sediments gradually become finer toward the center of the valley. Alluvial fans are the dominant geologic feature on the eastern portion of the Great Valley, forming as streams migrate laterally over time. Laterally shifting stream channels create coalescing fans, consisting of broad sheets of interfingering lenses of gravel, sand, and finer detritus.

The Great Valley is underlain by a sequence of marine and continental sedimentary rocks consisting of shale, siltstone, and sandstone. Beneath these rocks lie an impermeable basement complex of igneous and metamorphic rocks that are up to 13,000 feet below ground surface (bgs). These basement rocks are a subsurface extension of the same rocks that occur in the Sierra Nevada.

The Central Valley is often regarded as one continuous but heterogeneous aquifer system. The principal aquifer in the area is the coarse grained sediments located near the surface, consisting of intercalated lenses of clay, silt, silty and sandy clay, clayey and silty sand, sand, gravel, cobbles, and boulders (R.W. Page, 1969). The eastern portion of the San Joaquin Valley contains aquifer material characterized as coarse-grained, well-sorted, medium-to-coarse-grained, fluvial sediments, ranging between 400 and 500 feet thick in the valley center, and thinner toward the east and west.

3.6.2.2 Vicinity Setting

Because the Kings River drains a portion of the Sierra Nevada where glaciation previously carved out valleys, and there has been a relatively high rate of tectonic basin subsidence realized in the vicinity of the Project, the Kings River alluvial fan is relatively thick compared to other fans located in the eastern

Great Valley (Faunt et al., 2009). Alluvial materials in the Project vicinity are composed of the same granitic materials as the parent rocks of the Sierra Nevada. (Figure 3.6-1).

Surface soils in the area generally consist of alluvium such as silt and silty sands (Tetra Tech, 2013), likely deposited during previous flooding of the Kings River. These soils likely originated from the granitic rocks of the Sierra Nevada.

The alluvial aquifer in the Project vicinity is mostly unconfined and regional groundwater flow is generally toward the southwest, although pumping depressions in certain areas have caused localized deviant flow patterns (R.W. Page, 1969).

Surface waters in the area consist of natural rivers and manmade canals, seepage from which is the greatest source of groundwater recharge. Rainfall averages less than 10 inches per year.

In California, the supply and demand for aggregate resources are tracked by the CGS. The CGS regularly analyzes the supply and demand of aggregate resources in California, and publishes reports indicating the past consumption and anticipated future demand for regional aggregate supplies. The various regions studied throughout the State are market areas referred to as “Production-Consumption Regions.” The Project is in the Fresno Production-Consumption (P-C) Region, which services the needs of portions of central and eastern Fresno County and portions of southern Madera County. According to the California Department of Finance, population in the region is expected to nearly double in the next 50 years from 1,083,705 in 2010 to 1,989,331 in 2060.

The CGS report titled *Aggregate Availability in California – Map Sheet 52* (updated 2012) uses the Department of Finance future population estimates and historical per capita consumption to estimate future aggregate demand. Map Sheet 52 indicates that the P-C Region’s projected 50-year aggregate demand as of January 1, 2011, was approximately 435 MMtons. Existing permitted reserves at that time were indicated to be 46 MMtons. However, that estimate did not include the 63 MMtons approved for the Sanger-Centerville Expansion (Vulcan Materials Company) in 2007 or the 50 MMtons approved for the Madera Quarry (Shimmick Construction) in Madera County in 2010. In 2012, the Carmelita Mine and Reclamation project (Colony Land Company) was approved for 85 MMtons. Those three projects added 198 MMtons (net finished aggregate product) of permitted reserves to the P-C Region. Without adjusting for reserves consumed since January 1, 2011 total permitted reserves in the P-C region would be 244 MMtons.

In 2010, Map Sheet 52 indicated that the P-C Region consumed approximately 6.0 MT per year (MMtpy). At that consumption rate for the four-year period from 2011 through 2014 approximately 24 MMtons of permitted reserves would have been consumed leaving 220 MMtons of permitted reserves at the beginning of 2015, or approximately 50% of the region’s 50-year aggregate demand.

The Riverbend Project, if approved, would add 70 MMtons increasing the permitted aggregate reserves to 290 MMtons, or 67 % of the 50-year demand. If the proposed Austin Quarry project in Madera

County is approved, it would add 250 MMtons. Total permitted reserves in the region would then be 540 MMtons.

Future consumption of permitted reserves is affected by the maximum annual sales permitted for each site and annual consumption rates as described in the following two scenarios.

Table 3.6-1 shows the existing permitted aggregate operations in the Fresno P-C Region, assuming Austin Quarry and Riverbend were both permitted. If Austin and Riverbend were both approved, annual permitted sales would be 10.4 MMtpy. (Central Valley RM & River Rock annual sales are not included in the total since their permits expire in 2015 and 2016 respectively.)

Table 3.6-1. Existing Permitted Aggregates Operations

Operation	Maximum Annual Sales Permitted (million tons)
Cent. Valley RM (Sante Fe) ¹	Negligible
River Rock (Vulcan) ²	Negligible
Rockfield (Cemex) ³	1.0
Kings River (CMI) ⁴	1.0
Sanger (Vulcan) ⁵	2.5
Madera Quarry ⁶	0.9
Carmelita ⁷	1.25
Austin Quarry ⁸	2.5
Riverbend ⁸	1.25
Total	10.4⁹

¹. Permit expires in 2015

². Permit expires in 2016

³. Permit expires in 2023

⁴. Permit expires in 2043

⁵. Reserves depleted in 2059

⁶. Reserves depleted in 50 years

⁷. Not yet operational

⁸. Proposed

⁹. CVRM & River Rock not included since their permits expire in 2015 and 2016 respectively.

Assuming that Carmelita, Riverbend and Austin Quarry are fully operational in 2015 and that annual sales would equal the permitted annual sales, aggregate consumption in the next 50 years would be as follows (not all mine projects are permitted so this assumption assumes a maximum reserve scenario):

- 2023 (in 8 years): Rockfield permit expires, 83 MMtons would be consumed, and annual permitted sales would drop to 9.4 MMtons.
- 2043 in (29 years): CMI permit expires, an additional 188 MMtons would be consumed and annual permitted sales would drop to 8.4 MMtons.

- 2060 (in 45 years): Sanger reserves would be depleted, an additional 143 MMtons would be consumed and annual permitted sales would drop to 5.9 MMtons.
- 2065 (in 50 years): Madera Quarry's reserves would be depleted, an additional 30 MMtons would be consumed and annual permitted sales would drop to 5.0 MMtons.

Total consumption for the next 50 years would be 444 MMtons or 9 MMtons more than the 435 MMtons projected in Map Sheet 52. The remaining permitted reserves would be 96 MMtons. However, at the annual consumption rate of 11 MMtpy in 50 years, as estimated by Map Sheet 52, there would be less than 9 years of reserves remaining.

It should be noted that the 50-year demand is simply a measuring tool and not a limit. In a healthy supply and demand market, having more than 50 years of permitted reserves would provide more sources for aggregate products and should result in more competitive pricing for the consuming public.

In order to meet the required specifications for the broad range of aggregate products needed in the construction materials market, there needs to be a suitable balance of available rock and sand, roughly in the 50% rock/50% sand ratio. However, it appears that future market supply in the region may hit an imbalance with far more rock in supply than sand. This imbalance is primarily based on greater hard rock resources being developed and permitted than that of alluvial deposits which contain natural sand resources as well as rock. If the proposed Austin Quarry project in Madera County is approved, 300 MMtons (Madera Quarry 50 MMtons + Austin Quarry 250 MMtons), or 55% of the 546 MMtons of the region's reserves, would be from hard rock quarries, creating an imbalance in the rock to sand regional production. Technology allows for the production of sand from rock; however this process is more expensive than the washing and processing of natural sand. Manufactured sand is not the desired product by the local RMC producers or users. Producers of RMC have traditionally paid more and travelled great distances for natural concrete sand than manufactured sand because it flows better, is easier to pump and in some cases requires less cement than manufactured sand. With 55% of the local operations being rock reserves, natural occurring sand from the alluvial deposit on the Riverbend site on the Kings River will be critical to meet the sand demand for the region, including the demand of governmental agencies like Caltrans and the Fresno County Department of Public Works.

The California DOC classifies areas of known important mineral commodities, referred to as Mineral Resource Zones (MRZ), so that these areas may be given land use consideration by local agencies in their general plan preparation process. DOC classified most of the Kings River Resource Area as MRZ-2 (including the Riverbend Project site), indicating that significant mineral deposits (i.e., sand and gravel) of regional or statewide significance are present, or there is a high likelihood for their presence.

In 1988, the State published SMARA Designation Report No. 8 (DR-8), which designated the Kings River Resource Area, including the Project site, as having construction grade aggregate deposits that are of regional significance (*Designation of Regionally Significant Construction Aggregate Resources in the Fresno Production Consumption Region, SMARA Designation Report #8*, DOC and DMG, July 1988).

Distance matters since transportation plays a major role in the cost of aggregate to the consumer. Aggregate is a low-unit-value, high-bulk-weight commodity, and it must be obtained from nearby sources to minimize both the dollar cost to the aggregate consumer and other environmental and economic costs associated with transportation. If nearby sources do not exist, then transportation costs will significantly increase the cost of the aggregate by the time it reaches the consumer. Transporting aggregate from distant sources also results in increased fuel consumption, air pollution, traffic congestion, and road maintenance. Moreover, transportation cost is the principal constraint defining the market area for an aggregate mining operation.

3.6.2.3 Project Site Setting

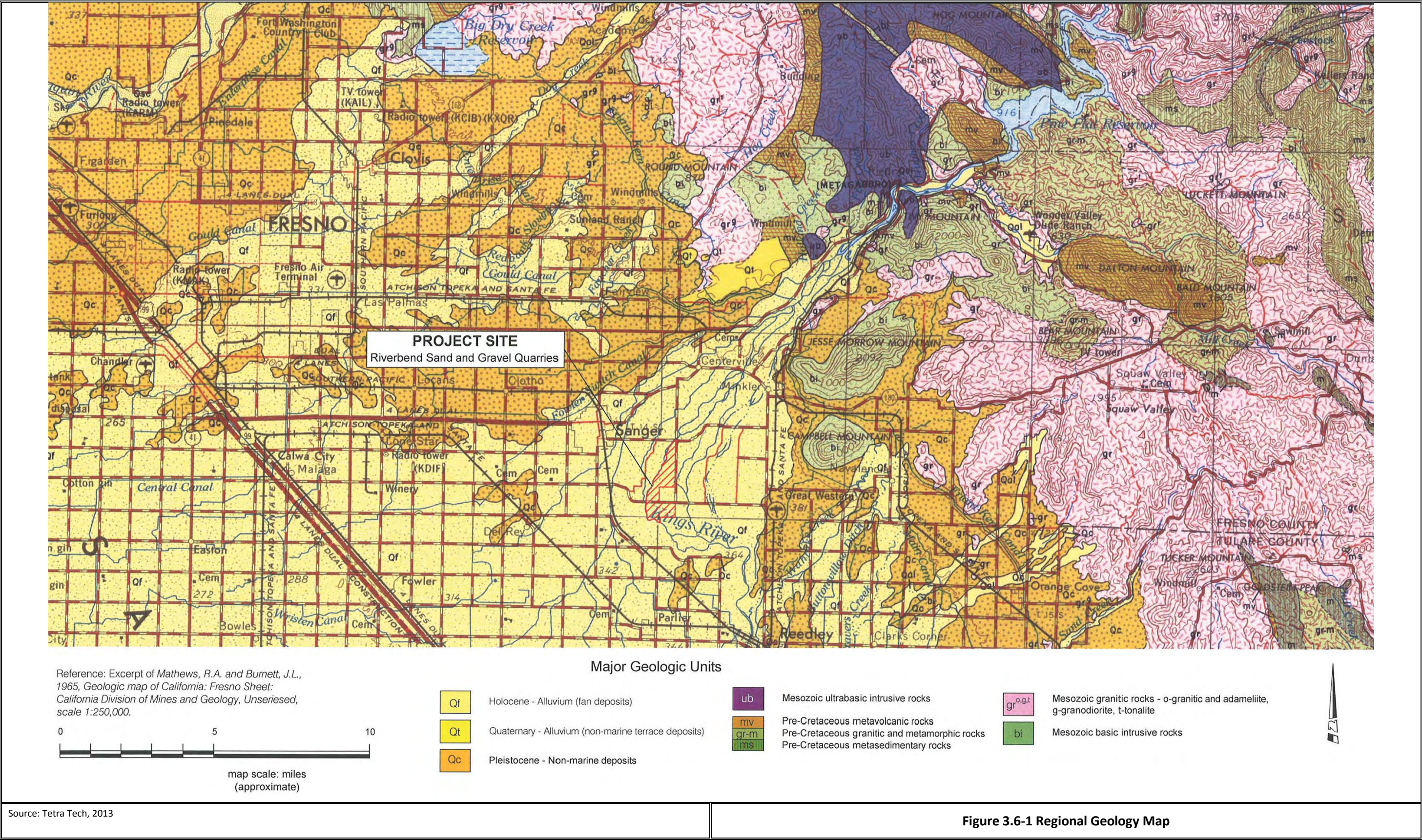
In 2010 and 2011, fourteen (14) exploratory test holes were drilled at the Project site. Each boring was 100 feet deep. In general, coarse grained alluvial materials associated with the Kings River alluvial fan were encountered in the borings. Bedrock was not encountered. The observed alluvium consists of sand, gravelly sand, and lesser amounts of silty sands and silt with clay.

More specifically, based on these site investigations, relatively coarse-grained deposits of the ancestral Kings River are generally predominant in the subsurface above a depth of about 200 to 220 feet. These deposits are primarily sand, gravel, and cobbles, and have been termed the Quaternary Older Alluvium. Some interlayered clay and silt layers are also present, but these are generally thin and discontinuous. Based on information from Sanger, Reedley, and the Great Western School, where deeper test holes and supply wells have been drilled, the top of the bedrock in the vicinity of the Project site is expected to be below a depth of 700 feet (Schmidt, 2013).

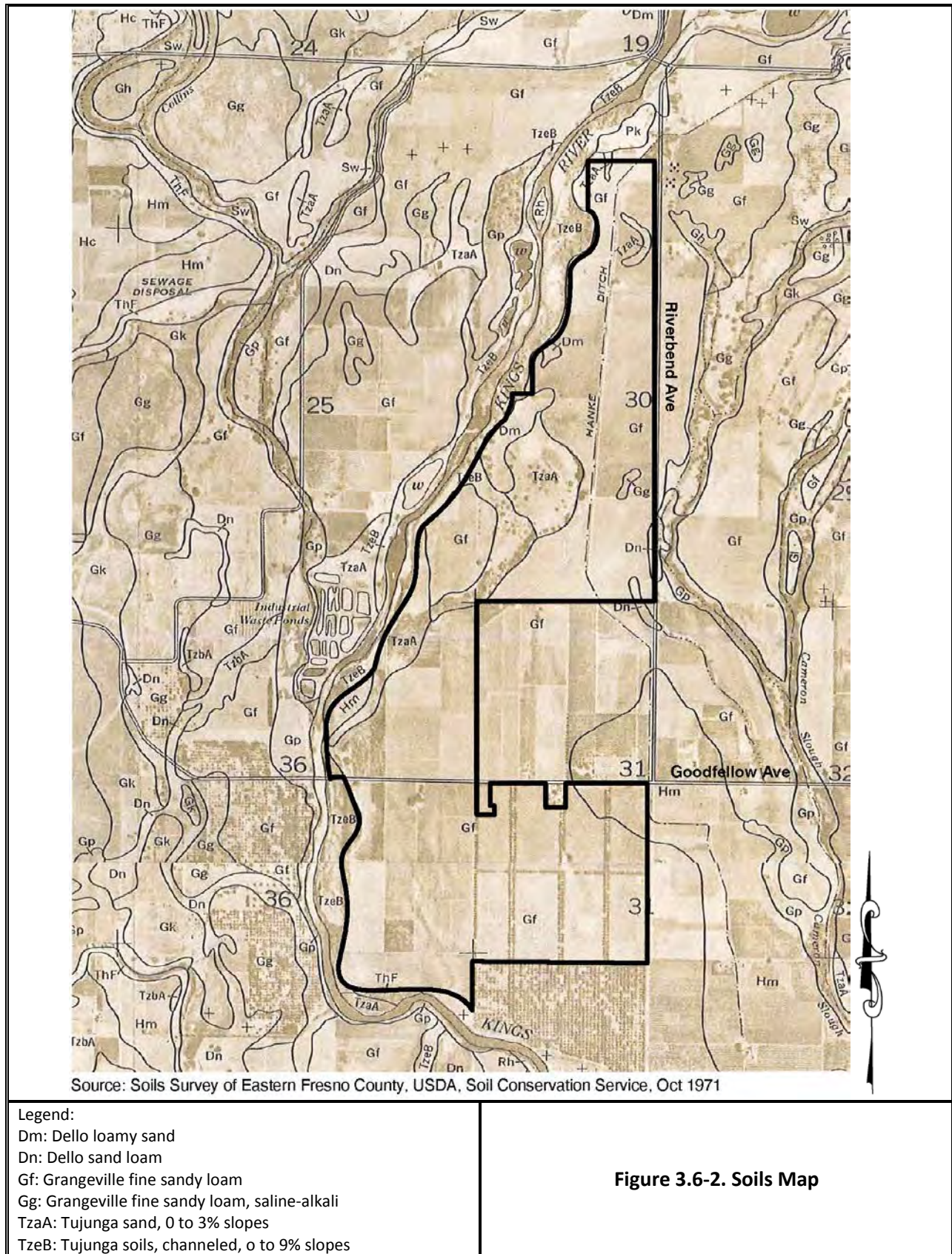
Most of surface area at the Project site is covered with Grangeville fine sandy loam (Figure 3.6-2). Soil types covering lesser proportions of the site include Tujunga sand, Hanford fine sandy loam, and Tujunga soils. Fresno County is among the counties listed as containing serpentine and ultramafic rock (OPR, 2000) which presents a concern regarding the presence of naturally occurring asbestos (NOA). However, no serpentine or ultramafic rock has been found on the Project site.

Based on monitor wells installed at the Project site, groundwater flows toward the south, parallel with the Kings River. As of June 2012, depth to water in the on-site wells ranged between 15 and 20 feet bgs.

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The Project site is not within or near an Alquist Priolo Fault Zone. However, based on a review of available fault source information, active and potentially active faults nearby to the Project site include the following.

Active faults:

- Great Valley Fault (Segments 13, 14), approximately 82 km west, southwest of the Project site;
- Kern Canyon Fault, approximately 100 km east, southeast of the Project site;
- Poso Creek Fault complex (closest active splay), approximately 112 km south of the Project site;
- Independence Fault, approximately 113 km east of the Project site;
- Owens Valley Fault Zone, approximately 120 km east of the Project site;
- San Andreas Fault, approximately 120 km southwest of the Project site.

Potentially active fault:

- Poso Creek Fault complex, approximately 88 km south of the Project site.
- The Clovis fault, approximately 20 km north of the Project site and approximately 8 to 9 km east of the City of Clovis. The Clovis Fault is believed to have been active during the Quaternary Period (past 1.6 million years), but there is no historical evidence of recent age activity in this fault. Consequently, this fault is classified as “potentially active.” It is believed that this fault runs along the foothills of the Sierra Nevada Mountains from an area near the San Joaquin River to north of the Town of Centerville.

3.6.3 Regulatory Setting

3.6.3.1 Federal

The 1997 Uniform Building Code (UBC) was developed by the International Conference of Building Officials (ICBO) and is used by most states, including California, as well as local jurisdictions to set basic standards for acceptable design of structures and facilities. The UBC provides information on criteria for seismic design, construction, and load-bearing capacity associated with various buildings and other structures and features. Additionally, the UBC identifies design and construction requirements for addressing and mitigating potential geologic hazards. New construction generally must meet the requirements of the most recent version of the UBC.

3.6.3.2 State

Alquist-Priolo Earthquake Fault Zone Act

The State Alquist-Priolo Earthquake Fault Zoning Act (A-P Act) of 1972 (Cal. Pub. Resources Code §2621 et seq.) was passed to mitigate the hazards associated with surface faulting in California. Administered

by the California Department of Conservation, the A-P Act prevents construction of buildings used for human occupancy on the surface traces of active faults. Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults.

Seismic Hazards Mapping Act

The 1990 Seismic Hazards Mapping Act (Cal. Pub. Resources Code §2690 et seq.) and related regulations establish a statewide minimum public safety standard for mitigation of earthquake hazards. The purpose of this Act is to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure as well as other hazards caused by earthquakes. The Act provides the minimum level of mitigation needed to reduce the risk of a building collapse. Under this Act, the lead agency can withhold permits until geologic investigations are conducted and mitigation measures are incorporated into building plans. In addition, the Act addresses not only seismically induced hazards but also expansive soils, settlement, and slope stability. The program and actions mandated by this Act closely resemble those of the A-P Act by requiring the State Geologist to delineate various “seismic hazard zones” and providing cities, counties, and/or other local permitting bodies with the authority to regulate certain development “projects” within these zones by withholding the development permits for a site until the geologic and soil conditions are investigated and appropriate mitigation measures (if required) are incorporated into development plans.

California Building Code

The California Building Code (CBC), known as Title 24, CCR, Part 2, specifies the acceptable design and construction requirements associated with various facilities or structures. These requirements are administered and updated by the California Building Standards Commission. This Code specifies criteria for open excavation, seismic design, and load-bearing capacity directly related to construction in the State. The CBC augments the UBC and provides information for specific changes to various sections therein. The seismic building requirements under the CBC are more stringent than the Federal UBC.

Surface Mining and Reclamation Act (SMARA)

With respect to addressing geotechnical slope stability for final reclamation slopes, SMARA (Cal. Pub. Resources Code §2710 et seq.) does not specify a minimum factor of safety for slope stability. However, Section 3502(b)(3) of SMARA Regulations (14 CCR §3502) states:

“The designed steepness and proposed treatment of the mined lands’ final slopes shall take into consideration the physical properties of the slope material, its probable maximum water content, landscaping requirements, and other factors. In all cases, reclamation plans shall specify slope angles flatter than the critical gradient for the type of material involved. Whenever final slopes approach the critical gradient for the type of material involved, regulatory agencies shall require an engineering analysis of the slope stability. Special emphasis on slope stability and design shall be necessary when public safety or adjacent property may be affected.”

Section 3704(d) requires final reclaimed fill slopes to be 2H:1V or flatter, except when site-specific geologic and engineering analysis demonstrate that the proposed final slope will have a minimum slope stability factor of safety that is suitable for the proposed end use, and when the proposed final slope can be successfully revegetated. Section 3704(f) further states:

“Cut slopes, including final highwalls and quarry faces, shall have a minimum slope stability factor of safety that is suitable for the proposed end use and conform with the surrounding topography and/or approved end use.”

3.6.3.3 Local

The Fresno County General Plan outlines several goals and policies related to seismic and geologic hazards for projects within their jurisdictional area. These goals and policies are summarized as follows:

Goal HS-D: To minimize the loss of life, injury, and property damage due to seismic and geologic hazards.

Policy HS-D.3: The County shall require that a soils engineering and geologic seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development in areas prone to geologic or seismic hazards (i.e., fault rupture, groundshaking, lateral spreading, lurchcracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).

Policy HS-D.4: The County shall require all proposed structures, additions to structures, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with the applicable provision of the Uniform Building Code (Title 24 of the California Code of Regulations) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk to public safety.

Policy HS-D.8: The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development that requires a County permit and is located in an area containing soils with high “expansive” or “shrink-swell” properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.

Policy HS-D.9: The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.

3.6.4 Significance Thresholds

3.6.4.1 Appendix G Thresholds from the State CEQA Guidelines

According to Appendix G of the CEQA Guidelines, the Project would have a significant effect if it would:

- a) *Expose people or structures to potential substantial adverse effects, involving the risk of loss, injury, or death involving:*
 - *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map issued by the State Geologist for the area or based on other substantial evidence of known fault;*
 - *Strong seismic ground shaking;*
 - *Seismic-related ground failure, including liquefaction; or*
 - *Landslides.*
- b) *Result in substantial soil erosion or the loss of topsoil.*
- c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.*
- d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to the life or property.*
- e) *Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.*

3.6.4.2 Additional Threshold of Significance

Requirements identified in the County policies and plans are addressed by the significance criteria above. There are no additional thresholds of significance related to geology and soils.

3.6.5 Methodology

This analysis is based on the review of applicable Federal, State and local requirements, Project design features, BMPs, operating practices and other environmental protection measures that have been incorporated into the Project to minimize potential impacts on the environment, review of the environmental evaluation of similar projects in the area, and comments received during the scoping process. A copy of the Scoping Report, which includes all the comment letters, is provided in Appendix A.

3.6.5.1 Seismicity and Ground Motion

Geologic hazards include earthquake-induced hazards such as surface fault ruptures, soil liquefaction, and seismically induced landslides. Because these hazards are caused by ground shaking, the potential for ground shaking must be assessed to provide the basis to evaluate these potential hazards.

As discussed in Section 3.6.2.3, the Project site is not within or near an Alquist Priolo Fault Zone. However, based on a review of available fault sources, there are seven nearby active and potentially active faults to the site.

To quantify the possible impact of seismically-induced ground shaking at the Project site during seismic events, the Peak Ground Acceleration (PGA) was evaluated. Tetrattech (Tetra Tech, 2013) performed a probabilistic analysis to assess the PGA for the Project site, using U.S. Geological Survey 2008 deaggregation methodology (<https://geohazards.usgs.gov/deaggint/2008>). The faults listed in Section 3.6.2.3 were utilized in this evaluation, as well as the following parameters:

- Location: N36.667, W 119.500;
- Exceedance probability of 10% in 50 years (475-yr return period); and
- $V_{s30} = 350$ m/s (Soil Type D; Bozorgonia and Bertero, 2004).

The PGA evaluated for the Project site, based on the faults identified and the parameters listed above, is 0.138 g and is associated with a modal earthquake of magnitude M_w 7.99 at a distance of 121 kilometers. This estimated value of PGA indicates that the Project site could experience strong ground shaking in the event of an earthquake.

3.6.5.2 Slope Stability

As described in Section 2.0 Project Description, the Project would involve excavation of multiple mine pits for production of sand and gravel products. Mine pits would be excavated to a depth of up to 100 feet bgs. Reclaimed slopes would be completed at a slope angle of 2:1. Underwater mining would be conducted to remove materials from areas beneath the groundwater elevation. No dewatering would be conducted. Silt byproducts from the aggregate plant would be used to backfill selected mine phases. The Project site is currently relatively flat, with a gentle south-southwest gradient of 0.18%.

Tetrattech (Tetra Tech, 2013) evaluated proposed slopes consistent with the Recommended Procedures for Implementation of DMG Special Publication 117A *Guidelines For Evaluating and Mitigating Seismic Hazards in California* (California Geologic Survey, 2008), which is considered the standard of practice for slope stability analyses in California. In addition, Tetrattech further evaluated the static and pseudostatic slope stability based on a Factor of Safety (Tetra Tech, 2014) which is provided in Appendix G. A discussion and summary of these analyses is presented below.

Slope stability analyses were performed for the proposed typical slope cross-section assuming a 100 feet high slope. Based upon the available data, clay layers are present at depth across the property and in adjacent off-site areas (Schmidt, 2013). Therefore, several configurations were evaluated to understand the impact of clay layers at depths of 30, 60, and 90 feet below the top of the slope on the stability of the proposed quarry slopes.

The results of the critical slope stability analyses for static and pseudostatic conditions are summarized in the Table 3.6-2. Results of the stability analyses indicate that, under the assumed Project site conditions, proposed 100 feet high quarry slopes excavated at a maximum gradient of 2(H):1(V) would be stable for static and pseudostatic conditions.

The calculated static and pseudo-static factors of safety are greater than 1.5 and 1.3, respectively, for the proposed slope configurations. These results satisfy SMARA guidelines and standard of practice for slope stability, based on the intended open space and habitat end uses of the reclaimed Project site.

Table 3.6-2. Stability Analyses for Planned Temporary and Permanent Quarry Slopes

Factor of Safety Static / Pseudostatic	Analysis Description
1.555 / 1.088	Overall stability of the 100-foot-high slope without clay layers.
1.546 / 1.1.182	Overall stability of the 100-foot-high slope with clay layer1 at 30 feet below grade.
1.580 / 1.371	Overall stability of the 100-foot-high slope with clay layer1 at 60 feet below grade.
1.583 / 1.360	Overall stability of the 100-foot-high slope with clay layer1 at 90 feet below grade.

3.6.5.3 Other Geological Hazards

In addition to ground shaking due to earthquakes, geologic hazards include surface fault rupture, soil liquefaction, seismically-induced differential settlement, ground lurching, seismically induced landsliding, lateral spreading, earthquake-induced flooding, seiches, and tsunamis. These potential impacts are further described below.

Surface Fault Rupture

Official Maps of Earthquake Fault Zones were reviewed to evaluate the location of the Project site relative to active fault zones. Earthquake Fault Zones (known as Special Studies Zones prior to 1994) have been established in accordance with the A-P Act. The Act directs the State Geologist to delineate the regulatory zones that encompass surface traces of active faults that have a potential for future surface fault rupture. As discussed in Section 3.6.3.2, the purpose of the A-P Act is to regulate development near active faults in order to mitigate the hazard of surface fault rupture.

The Project site is not located within a designated Alquist-Priolo Earthquake Fault Zone for fault surface rupture hazard. Further review of the 2010 Fault Activity Map of California (Figure 3.6-3); (Charles W. Jennings, 2010) indicates that no surface traces of any active or potentially active faults pass directly through or in the vicinity of the Project site. The potential for surface rupture due to faulting occurring beneath the Project site is considered to be minimal.

Liquefaction Potential

Liquefaction occurs when saturated sediments temporarily lose strength during an earthquake and act like a liquid rather than a solid. Liquefaction potential is a function of three factors: soil type, depth to groundwater, and seismic induced ground shaking potential.

The available data for the Project site indicate that the percentage of fines (passing the #200 sieve) for the granular deposits (sand, gravelly sand, and lesser amounts of silty sands and silt with clay) within the planned depth of mining range from less than 5 percent to about 30 percent. Clay and silt lens materials, which occur at depth, contain greater than 50 percent fines.

Whereas these materials, namely sand and gravelly sand, may be generally considered potentially liquefiable, in light of the high percentage of fines within their matrix, the depth of groundwater (15 to 20 ft), the anticipated level of ground shaking ($PGA=0.138$), and the fact that the density of those materials is likely to increase with depth, the potential for liquefaction and its detrimental effects on the site performance is considered low.

Seismically-Induced Settlement

Earthquake induced settlement is compression of the underlying loose soils due to liquefaction or densification that occur during strong ground shaking and causes uneven settlement of the ground surface. The potential for soil liquefaction is considered low, and therefore the potential for liquefaction-induced settlement is low.

Ground Lurching and Seismically-Induced Landsliding

Ground lurching is the horizontal movement of ground located adjacent to slope faces caused by seismic forces exerted during an earthquake. It can occur in areas underlain by soft or weak deposits and often results in permanent displacement and longitudinal cracking parallel to the slope face at some distance setback from the top of the slope. In steep slope areas, significant ground shaking may cause landslides or rock slope failures.

The Project site could experience strong ground shaking in the event of an earthquake. However, ground acceleration was considered in the slope stability evaluation described above, which concluded that factors of safety for the proposed slopes are acceptable.

Lateral Spreading

Seismically induced lateral spreading involves lateral movement of earth materials due to ground shaking. Lateral spreading is characterized by near-vertical cracks with predominantly horizontal movement of the soil mass involved along potentially liquefiable layers. Because the potential for liquefaction at the Project site is low, the potential for lateral spreading is also low.

Earthquake Induced Flooding

Flooding may be caused by failure of dams or dikes in the event of an earthquake. The closest significant dam to the site, the Pine Flat Dam, is located approximately 14 miles to the northeast (upstream). The dam was constructed in 1956 for flood control and water storage purposes, and controls upstream flow of the Kings River. The dam has withstood numerous earthquakes since it was constructed, and a catastrophic earthquake-induced failure of the dam is considered unlikely.

In addition, several confined bodies of water include historic mining related ponds are located adjacent to the Kings River near the Project site. Water elevations in these ponds or lakes are similar to that of Kings River. Therefore, these lakes or ponds are not considered to be a likely cause of earthquake related flooding at the Project site.

Tsunamis and Seiches

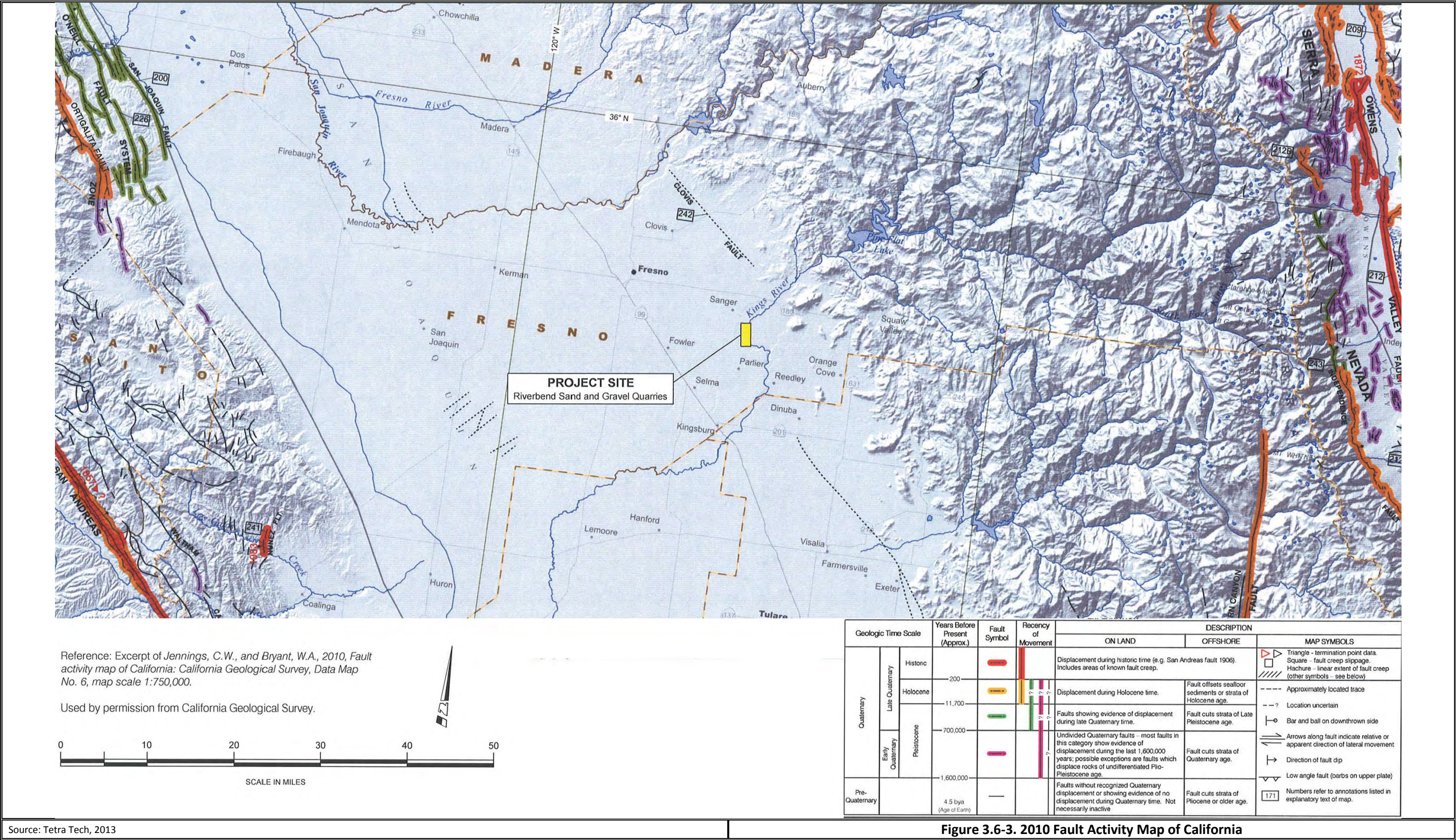
Tsunamis are generated in large bodies of water by fault displacement or major ground movement. A seiche is an earthquake-induced wave in a confined body of water such as a lake, reservoir, or bay. Because there are no substantially sized lakes, reservoirs, or bays near the Project site, there is no risk of tsunamis or seiches.

Soil Erosion

Soil erosion may be caused by alteration of the Project site's existing drainage pattern or failure of slopes. The Project would not affect the banks, channel, or capacity of the Kings River. As shown on Figure 2-7 Mine Plan, Project elements would be set back 50 feet from the designated and regulated floodways and would not alter the designated and regulated floodways.

As discussed in Section 3.9.6.4 no natural surface water courses traverse the Project site, so excavation of mine pits is not expected to affect flows in surface waters such as the Kings River. Runoff that currently occurs from the portions of the Project site to be reclaimed as ponds would be eliminated since these areas would no longer be irrigated and all precipitation that falls on these areas would be retained. The Project site could experience strong ground shaking in the event of an earthquake which could potentially cause slope failure. However, ground acceleration was considered in the slope stability evaluation described above, which concluded that factors of safety for the proposed slopes are acceptable.

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Source: Tetra Tech, 2013

Figure 3.6-3. 2010 Fault Activity Map of California

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Project Design Features, BMPs and Environmental Protection and Minimization Measures

As discussed above and in Section 2.2.17, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project to minimize potential impacts on the environment. The following identifies some of the environmental protective measures that were considered during this evaluation:

- Construction of structures on the Project site would require acquisition of building permits from the County of Fresno. Pursuant to requirements of County of Fresno building permits, CBC design and construction requirements must be implemented, including a series of seismic related standards.
- When mining operations shift to Phases 6A through 8B south of Goodfellow Avenue, transport of mined aggregate from those phases to the Plant site would be by a conveyor through a tunnel to be constructed under Goodfellow Avenue. The necessary geological reports would be prepared and the tunnel would be constructed in accordance with regulatory requirements.
- Compliance with the mandatory obligations to prepare a SWPPP would provide for additional erosion control.
- Compliance with SMARA requirements for slope stability and other mining safety elements would be required.
- Topsoil would be stored on site for future use in accordance with the Surface Mining and Reclamation Plan. Stockpiled topsoil would be planted with a vegetation cover or protected by other effective means to prevent water and wind erosion.
- A permit from the County would be obtained prior to installing a septic system.

Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

If materials from Phases 6A, 6B and 7 were to be processed at the CUP 3052 plant (Section 2.2.15.7), the relocation of a conveyor within the Project site would not create any different or additional effects on the geology and soil.

3.6.6 Project –Level Impacts and Mitigation Measures**3.6.6.1 Issues Found to Have No Impact**

The following CEQA threshold was evaluated and it was determined that the Project would have no impact and this potential effect does not need to be considered further.

d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to the life or property?

The Project area does not contain expansive soils.

3.6.6.2 Seismic and Seismic Related Hazards

Impact Statement

Impact GS-1: Would the Project expose people or structures to potential substantial adverse effects, involving the risk of loss, injury, or death involving:

- Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map issued by the State Geologist for the area or based on other substantial evidence of known fault;
- Strong seismic ground shaking;
- Seismic-related ground failure, including liquefaction; or
- Landslides? (**CEQA Guidelines Threshold Criteria (a)**)

Impact Analysis

Seismic events, such as earthquakes, cause ground shaking which can damage structures. Earthquake intensities vary throughout the State, depending upon the magnitude of the earthquake, the distance from the causative fault, and the type of geologic material underlying a given location. In most of California, ground shaking caused by earthquakes is likely to occur due to the presence of active faults over much of the State. Structure design is also an important factor in regard to the extent of damage that is caused by ground shaking.

The Project site is not located within a currently designated Alquist Priolo Fault Zone. A peak ground acceleration of 0.138 g was calculated for the Project site by Tetrattech (Tetra Tech, 2013) for the 475 year return period earthquake. This means that the Project site could experience strong ground acceleration (shaking) during an earthquake.

The Project would involve the construction of an aggregate processing plant, HMA plant, RMC plant, and other ancillary facilities. Construction of these structures would require acquisition of building permits from the County of Fresno. Pursuant to requirements of County of Fresno building permits, CBC design and construction requirements must be implemented, including a series of seismic related standards. These standards are intended to minimize structural damages resulting from seismic shaking. Compliance with these requirements would therefore minimize the probability of seismic related structural damage to proposed structures.

In addition to ground shaking, effects of seismic activity may include surface fault rupture, soil liquefaction, seismically induced differential settlement, ground lurching, lateral spreading, and earthquake-induced flooding. Other geologic hazards include seiches and tsunamis. As described above, none of these geologic hazards are considered likely to occur at the Project site. As a result, the impact of these potential geologic hazards is considered less than significant.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None Required

Level of Significance After Mitigation

Not applicable.

3.6.6.3 Soil Erosion and Top Soil Removal**Impact Statement**

Impact GS-2: Would the Project result in substantial soil erosion or the loss of topsoil? (**CEQA Guidelines Threshold Criteria (b)**)

Impact Analysis

The Project site and surrounding area are currently relatively flat; with a gentle south-southwest gradient of 0.18%. The Project will involve excavation of mine pits of up to 100 feet deep. Upon reclamation, certain pits would remain as water features, and selected areas would be backfilled to native grade. Remaining pits would have 2:1 (H:V) slopes upon reclamation. The pond slopes will be cut slopes of native materials, not fill slopes. As described above, slope stability analyses were conducted to determine if the slopes would remain stable during static conditions and during seismic events.

Factors of safety calculated by Tetrattech (Tetra Tech, 2013) exceed 1.5 for static and 1.088 for pseudo-static (seismic) conditions. These calculated factors of safety indicate that the proposed slopes would be suitably stable against gross failure for the anticipated long term conditions, including the effects of seismic shaking. Compliance with the mandatory obligations to prepare a SWPPP would provide for additional erosion control (refer to Section 3.9). Therefore, this potential impact is considered less than significant.

Topsoil would be removed prior to mining each phase and stored separately for later use as final cover for reclaimed farmland and final slopes of ponds. Topsoil that cannot be used immediately or in the near term would be stockpiled separately from subsoil overburden. Stockpiled topsoil would be planted with a vegetation cover or protected by other equally effective means if necessary to prevent water and wind erosion. The filled phases would be topped with several feet of topsoil and reclaimed back to farmland to approximate original grade. Because topsoil would be stored on site for future use in accordance with the Surface Mining and Reclamation Plan, less than significant impacts would result.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None Required

Level of Significance After Mitigation

Not applicable

3.6.6.4 Slope Stability**Impact Statement**

Impact GS-3: Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? **(CEQA Guidelines Threshold Criteria (c))**

Impact Analysis

The Project site and surrounding area are currently relatively flat; with a gentle south-southwest gradient of 0.18%. The Project will involve excavation of mine pits of up to 100 feet deep. Upon reclamation, certain pits would remain as water features, and selected areas would be backfilled to native grade. Remaining pits would have 2:1 (H:V) slopes upon reclamation. The pond slopes will be cut slopes of native materials, not fill slopes. As described above, slope stability analyses were conducted to determine if the slopes would remain stable during static conditions and during seismic events.

For the static analyses a minimum Factor of Safety of 1.3 is recommended for temporary and permanent quarry slopes (i.e., lakes). For the screening pseudostatic analyses the resulting Factor of Safety is required to be greater than 1, in order for the slope to be considered seismically stable with permanent seismically induced slope movement of less than 12 inches. Factors of safety calculated by Tetrattech (Tetra Tech, 2013) exceed 1.5 for static and 1.088 for pseudo-static (seismic) conditions. These calculated factors of safety indicate that the proposed slopes will be suitably stable against gross failure for the anticipated long term conditions, including the effects of seismic shaking. Therefore, this potential impact is considered less than significant.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None Required

Level of Significance After Mitigation

Not applicable

3.6.6.5 Septic Tanks

Impact Statement

Impact GS-4: Does the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? (CEQA Guidelines Threshold Criteria (e))

Impact Analysis

The Project would involve installation of a septic system for disposal of domestic wastewater generated at the Project site. Installation of the septic system would require acquisition of a permit from Fresno County Environmental Health Department.

Soils at the Project site generally consist of a sequence of coarse-grained sediments that are hundreds of feet thick. In general, coarse sediments such as these are permeable enough to be suitable for septic systems. Therefore, this potential impact is considered less than significant.

Level of Significance Before Mitigation

Less Than Significant.

Mitigation Measures

None Required.

Level of Significance After Mitigation

Not applicable.

3.6.7 Cumulative Level Impacts and Mitigation Measures

The geological context for cumulative impacts for soils and geology impacts is the immediate regional area encompassing the cities of Reedley and Sanger, and the Kings River Valley.

As discussed in Section 3.6.6.1, CEQA Guidelines Threshold d) was determined to have no impact and therefore further evaluation is not considered necessary. The potential cumulative impacts associated with CEQA Thresholds a), b), c) and e) are discussed below.

Would the Project, when considered in conjunction with other cumulative projects, expose people or structures to potential substantial adverse effects, involving the risk of loss, injury, or death involving:

- ***Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map issued by the State Geologist for the area or based on other substantial evidence of known fault;***

- ***Strong seismic ground shaking;***
- ***Seismic-related ground failure, including liquefaction; or***
- ***Landslides? (CEQA Guidelines Threshold Criteria (a))***

The cumulative projects identified on Table 3-1 are or will be required to be in compliance with the UBC/CBC and the County General Plan. Therefore the projects are not likely to expose people or structures to potential substantial adverse effects involving risk of loss, injury or death associated the seismic and/or landslide hazards listed above. Overall cumulative impacts associated with these effects are less than significant.

The Project site is not located within a currently designated Alquist Priolo Fault Zone. In addition to ground shaking, effects of seismic activity may include surface fault rupture, soil liquefaction, seismically induced differential settlement, ground lurching, lateral spreading, and earthquake-induced flooding. Other geologic hazards include seiches and tsunamis. As described in Section 3.6.6.2, none of these geologic hazards are considered likely to occur at the Project site. As a result, the Project would not make a cumulatively considerable contribution and the potential cumulative impact of these potential geologic hazards is considered less than significant.

Would the Project, when considered in conjunction with other cumulative projects, result in substantial soil erosion or the loss of topsoil. (CEQA Guidelines Threshold Criteria (b))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. They will be required to comply with SMARA requirements for slope stability and soil erosion as well as their site specific SWPPP. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. However, these projects are located in or near the City of Sanger, and it is not anticipated that these projects would have a significant soil erosion or loss of topsoil cumulative effect. It is also assumed that, if they are approved, the projects will be considered consistent with applicable requirements and the County General Plan.

The Project site is currently relatively flat and future excavation will be conducted in accordance with SMARA requirements. Slope stability analysis was conducted to determine if the slopes would remain stable during static conditions and seismic events. Compliance with the SWPPP would also provide for additional erosion control. Top soil would be stored on the Project site for future use in accordance with the approved Surface Mining and Reclamation Plan. The Project would not result in a significant impact

and is considered consistent with the County General Plan. Therefore, the Project would not make a cumulatively considerable contribution to this impact and the Project's cumulative impact is considered to be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (CEQA Guidelines Threshold Criteria (c))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. These projects are not considered likely to expose people or structures to potential effects because they are located on a geologic unit or soil that is unstable or would become unstable as a result of the project. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. It is assumed that, if they are approved, the projects will be considered consistent with applicable requirements and the County General Plan and that these projects would not be built on a geologic unit or soil that is unstable or become unstable as a result of the project. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.6.6.4, the Project site is currently relatively flat and future excavation will be conducted in accordance with SMARA requirements. Slope stability analysis was conducted to determine if the slopes would remain stable during static conditions and seismic events. The calculated factors of safety indicated that the proposed slopes would be suitably stable against gross failure for the anticipated long term conditions. The Project would not result in a significant impact and is considered consistent with the County General Plan. Therefore, the Project would not make a cumulatively considerable contribution to this impact and the Project's cumulative impact is considered to be less than significant.

Does the Project, when considered in conjunction with other cumulative projects, have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? (CEQA Guidelines Threshold Criteria (e))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. It was determined that these projects can support septic systems as necessary, or will be developed in an area capable of

connecting to sewers for the disposal of waste waters. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. It is assumed that these projects will be consistent with applicable requirements and the County General Plan and that the projects will be capable of supporting septic systems as necessary, or will be connected to sewers for the disposal of waste waters. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Project would require the acquisition of a permit for the proposed septic system. Therefore, the Project would not make a cumulatively considerable contribution to this impact and the Project's cumulative impact is considered to be less than significant.

3.6.8 Alternatives to Significant Effects

No Project Alternative

The No Project Alternative would avoid all Project-related impacts associated with geology and soils. However, since the Project design features and BMPs already reduce impacts associated with these effects to less than significant, this alternative would not significantly reduce potential impacts.

Reduced Annual Production Alternative

This alternative would evaluate the potential impacts from artificially limiting the proposed production by a given amount. This alternative would not result in any changes that would impact geological or soil effects; therefore, it would not reduce potential impacts associated with the Project.

Reduced Project Size Alternative

This alternative would evaluate the potential impacts from artificially reducing the Project footprint by some stated amount. This alternative would not result in any changes that would impact geological or soil effects; therefore, it would not reduce potential impacts associated with the Project.

Reduced Mining Depth Alternative

This alternative would evaluate the potential impacts from artificially reducing the mining depth by some stated amount. The slope stability avoidance measures established for the Project include design features and BMPs that reduce potential impacts to less than significant. These would be applicable to the alternative. Therefore, implementation of the Reduced Mining Depth Alternative would not avoid or lessen a potentially significant impact to geology and soils.

Different Phasing Alternative

This alternative would evaluate the potential impacts from revising the phasing plan. This alternative would not result in any change to potential impacts associated with geological and soil effects; therefore, it would not reduce potential impacts associated with the Project.

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3.7 GREENHOUSE GASES/CLIMATE CHANGE

3.7.1 Introduction

This section describes the existing environmental setting for greenhouse gas (GHG) emissions and global climate change. Potential impacts from implementation of the Project on both the region and the global climate are analyzed and discussed.

Information in this section is based on the Emission Inventory and Air Quality Impact Analysis (Dudek, October 2013), which is included in this Draft EIR as Appendix H. The County and its EIR preparer, Sespe Consulting, conducted a peer review of the analysis that was performed and conducted its own independent analysis to reach their conclusions.

3.7.2 Environmental Setting

Climate change refers to global changes in the average weather of the earth measured by changes in wind patterns, storms, precipitation, and temperature. While climate change is global in scale, California-specific impacts to the climate may result in a loss of snow-pack, increased risk of large wildfires, and a potential reduction in the quality and quantity of certain agricultural products.

Heat retention within the atmosphere is an essential process to sustain life on Earth. The natural process through which heat is retained in the troposphere is called the “greenhouse effect.” Principal GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), O₃, and water vapor. Some GHGs, such as CO₂, CH₄, and N₂O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Emissions of CO₂ are largely byproducts of fossil-fuel combustion, whereas CH₄ results mostly from off-gassing associated with agricultural practices and landfills. GHG emissions are believed to directly affect the global climate.

The accumulation of GHGs in the atmosphere contributes to the regulation of the earth’s temperature. Some GHGs can remain in the atmosphere for long periods of time. The following six GHGs are recognized under the Kyoto Protocol and have been found by the International Panel on Climate Change to have an effect on global climate change.

Carbon Dioxide (CO₂) is an odorless, colorless natural GHG. CO₂ is emitted from natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include burning coal, oil, natural gas, and wood.

Methane (CH₄) is a flammable GHG. A natural source of CH₄ is from the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain CH₄, which is extracted for fuel. Other sources include landfills, fermentation of manure, and ruminants such as cattle.

Nitrous Oxide (N₂O) is a colorless GHG. N₂O is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources,

some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load.

Hydrofluorocarbons (HFCs) are synthetic chemicals that are used as a substitute for chlorofluorocarbons (CFCs). Of all the GHGs, they are one of three groups with the highest global warming potential (GWP). The effect each GHG has on climate change is measured as a combination of the volume or mass of its emissions, plus the potential of a gas or aerosol to trap heat in the atmosphere, known as its GWP. HFCs are human made for applications such as air conditioners and refrigerants.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride (SF₆) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest global warming potential of any gas evaluated, 23,900 times that of CO₂. SF₆ is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

3.7.3 Applicable Policies, Plans and Regulations

3.7.3.1 Federal Activities

Massachusetts v. EPA

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497, the U.S. Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the EPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the Clean Air Act. On December 7, 2009, the EPA Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- Elevated concentrations of GHGs—CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the “endangerment finding.”
- Combined emissions of GHGs—CO₂, CH₄, N₂O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the “cause or contribute finding.”

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act

On December 19, 2007, President Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the Act would do the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon (mpg) for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

EPA and NHTSA Joint Final Rules for Vehicle Standards

On April 1, 2010, the EPA and the Department of Transportation's NHTSA announced a joint final rule to establish a national program consisting of new standards for light-duty vehicles model years 2012 through 2016. The joint rule is intended to reduce GHG emissions and improve fuel economy. The EPA finalized the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA finalized revised Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act (EPA, 2010). The final rule follows the EPA and Department of Transportation's joint proposal on September 15, 2009, and is the result of President Obama's May 2009 announcement of a national program to reduce GHGs and improve fuel economy. This final rule became effective on July 6, 2010 (75 FR 25324, May 7, 2010).

The EPA's GHG standards require new passenger cars, light-duty trucks, and medium-duty passenger vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile in model year 2016, equivalent to 35.5 mpg if the automotive industry were to meet this CO₂ level through fuel economy improvements alone. The CAFE standards for passenger cars and light trucks will be phased in between 2012 and 2016, with the final standards equivalent to 37.8 mpg for passenger cars and 28.8 mpg for light trucks, resulting in an estimated combined average of 34.1 mpg. Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program. The rules will simultaneously reduce GHG emissions, improve energy security, increase fuel savings, and provide clarity and predictability for manufacturers (EPA, 2010).

In 2011, the EPA and NHTSA approved the first-ever program to reduce GHG emissions and increase fuel efficiency for medium- and heavy-duty vehicles (76 FR 57106, September 15, 2011). Effective November

14, 2011, the CO₂ emissions and fuel efficiency standards of this regulation apply to model year 2014 to 2018 combination tractors (i.e., semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles including transit and school buses. This regulation covers vehicles with a gross vehicle weight rating of 8,500 pounds or greater; medium-duty passenger vehicles are covered by the previous regulation for passenger cars and light-duty trucks. In addition, the EPA has adopted standards to control HFC leakage from air conditioning systems in combination tractors and heavy-duty pickup trucks and vans as well as CH₄ and N₂O standards for heavy-duty engines, pickup trucks, and vans. Phased in through model year 2017, the CO₂ and fuel consumption standards for combination trailers depend on the weight class, cab type, and roof length. The CO₂ standards are expressed in grams of CO₂ per ton-mile, while the fuel consumption standards are expressed in gallons per 1,000 ton-miles, each accounting for the carrying capacity of the tractor and trailer. These standards represent an overall fuel consumption and CO₂ emissions reduction of up to 23 percent when compared to a baseline 2010 model year. The CO₂ and fuel consumption standards for heavy-duty pickup trucks and vans are applied as corporate average values and are phased in with increasing stringency from model year 2014 to 2018. The final EPA standards for heavy-duty pickup trucks and vans for 2018 (including a separate standard to control air conditioning system leakage) represent a GHG reduction of 17% for diesel vehicles and 12% for gasoline vehicles compared to a 2010 baseline. The EPA standards for vocational vehicles, which apply initially to model year 2014 to 2016 and then to model year 2017 vehicles, are expected to reduce GHG emissions by 6 to 9% compared to a 2010 baseline.

In August 2012, the EPA and NHTSA approved a second round of GHG and CAFE standards for model years 2017 and beyond (77 FR 62624, October 15, 2012). These standards will reduce motor vehicle GHG emissions to 163 grams of CO₂ per mile, which is equivalent to 54.5 mpg if this level were achieved solely through improvements in fuel efficiency, for cars and light-duty trucks by model year 2025. A portion of these improvements, however, will likely be made through improvements in air conditioning leakage and through use of alternative refrigerants, which would not contribute to fuel economy. The first phase of the CAFE standards, for model year 2017 to 2021, are projected to require, on an average industry fleet wide basis, a range from 40.3 to 41.0 mpg in model year 2021. The second phase of the CAFE program, for model years 2022 to 2025, includes standards projected to require, on an average industry fleet wide basis, a range from 48.7 to 49.7 mpg in model year 2025. These standards are not final due to the statutory requirement that NHTSA set average fuel economy standards not more than five model years at a time. The regulations also include targeted incentives to encourage early adoption and introduction into the marketplace of advanced technologies to dramatically improve vehicle performance, including:

- Incentives for electric vehicles, plug-in hybrid electric vehicles, and fuel cells vehicles.
- Incentives for hybrid technologies for large pickups and for other technologies that achieve high fuel economy levels on large pickups.
- Incentives for natural gas vehicles.
- Credits for technologies with potential to achieve real-world greenhouse gas reductions and fuel economy improvements that are not captured by the standards test procedures.

3.7.3.2 State of California

AB 1493

In response to the transportation sector accounting for more than half of California's CO₂ emissions, Assembly Bill 1493 (AB 1493, Pavley) was enacted on July 22, 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set the GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

Before these regulations could go into effect, the EPA had to grant California a waiver under the federal Clean Air Act, which ordinarily preempts state regulation of motor vehicle emission standards. The waiver was granted by Lisa Jackson, the EPA Administrator, on June 30, 2009.

Executive Order S-3-05

In June 2005, Governor Arnold Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80% below 1990 levels by 2050. The Secretary of the California EPA is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Representatives from several state agencies comprise the Climate Action Team (CAT), which is responsible for implementing global warming emissions reduction programs. The CAT fulfilled its report requirements through the March 2006 CAT Report to the Governor and the Legislature (CAT, 2006). A second report (CAT, 2010a) expands on the policy oriented in the 2006 assessment.

The 2009 Climate Action Team Biennial Report (CAT, 2010a), published in April 2010, expands on the policy outlined in the 2006 assessment. The 2009 report provides new information and scientific findings regarding the development of new climate and sea level projections using new information and tools that have recently become available and evaluates climate change within the context of broader social changes, such as land use changes and demographics. The 2009 report also identifies the need for additional research in several different aspects that affect climate change in order to support effective climate change strategies. The aspects of climate change determined to require future research include vehicle and fuel technologies, land use and smart growth, electricity and natural gas, energy efficiency, renewable energy and reduced carbon energy sources, low GHG technologies for other sectors, carbon sequestration, terrestrial sequestration, geologic sequestration, economic impacts and considerations, social science, and environmental justice.

Subsequently, the 2010 Climate Action Team Report to Governor Schwarzenegger and the California Legislature (CAT, 2010b) reviews past climate action milestones including voluntary reporting programs,

GHG standards for passenger vehicles, the Low Carbon Fuel Standard (LCFS), a statewide renewable energy standard, and the cap-and-trade program. Additionally, the 2010 report includes a cataloguing of recent research and ongoing projects; mitigation and adaptation strategies identified by sector (e.g., agriculture, biodiversity, electricity, and natural gas); actions that can be taken at the regional, national, and international levels to mitigate the adverse effects of climate change; and today's outlook on future conditions.

AB 32

In furtherance of the goals established in Executive Order S-3-05, the California Legislature enacted Assembly Bill 32 (AB 32, Nuñez and Pavley), the California Global Warming Solutions Act of 2006, which Governor Arnold Schwarzenegger signed on September 27, 2006. The GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020.

CARB is responsible for developing and carrying out the programs and requirements necessary to achieve the goals of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any adopted rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism.

The first action under AB 32 resulted in the adoption of a report listing early action GHG emission reduction measures on June 21, 2007. The early actions include three specific GHG control rules. On October 25, 2007, CARB approved six additional early action GHG reduction measures under AB 32. The original three adopted early action regulations meeting the narrow legal definition of "discrete early action GHG reduction measures" consist of:

- A low-carbon fuel standard to reduce the "carbon intensity" of California fuels.
- Reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of "do-it-yourself" automotive refrigerants.
- Increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.

The additional six early action regulations, which were also considered "discrete early action GHG reduction measures," consist of:

1. Reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology.
2. Reduction of auxiliary engine emissions of docked ships by requiring port electrification.

3. Reduction of PFCs from the semiconductor industry.
4. Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products).
5. Requirement that all tune-up, smog check, and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency.
6. Restriction on the use of SF6 from non-electricity sectors if viable alternatives are available.

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMTCO₂E/yr. In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of GHGs for large facilities that account for 94% of GHG emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and other industrial sources that emit CO₂ in excess of specified thresholds.

On December 11, 2008, CARB approved the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations will occur over the next 2 years, becoming effective by January 1, 2012. The key elements of the Scoping Plan include (CARB, 2008):

- Expanding and strengthening existing energy efficiency programs, and building and appliance standards.
- Achieving a statewide renewables energy mix of 33%.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

SB 1368

In September 2006, Governor Arnold Schwarzenegger signed Senate Bill 1368 (SB 1368, Perata), which requires the California Energy Commission (CEC) to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the California Public Utilities Commission (CPUC). This effort will help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low or lower than new combined-cycle natural gas plants by requiring imported electricity to meet GHG performance standards in California and by requiring that the standards be developed and adopted in a public process.

Executive Order S-1-07

Issued on January 18, 2007, Executive Order S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO₂-equivalent gram per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. Carbon intensity is a measurement of the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources such as algae, wood, and agricultural waste. In addition, the Low Carbon Fuel Standard would drive the availability of plug-in hybrid, battery electric, and fuel-cell-power motor vehicles. The Low Carbon Fuel Standard is anticipated to replace 20% of the fuel used in motor vehicles with alternative fuels by 2020.

SB 97

In August 2007, the Legislature enacted Senate Bill 97 (SB 97, Dutton), which directs the Governor's Office of Planning and Research (OPR) to develop guidelines under CEQA for the mitigation of GHG emissions. The amendments became effective on March 18, 2010. The amended guidelines establish several new CEQA requirements concerning the analysis of GHGs, including the following:

- Requiring a lead agency to “make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project” (14 CCR §15064.4(a)).
- Providing a lead agency with the discretion to determine whether to use quantitative or qualitative analysis or performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR §15064.4(a)).
- Requiring a lead agency to consider the following factors when assessing the significant impacts from GHG emissions on the environment:
 - The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.

- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR §15064.4(b)).
- Allowing lead agencies to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures, including offsets that are not otherwise required (14 CCR §15126.4(c)).

The amended guidelines also establish two new guidance questions regarding GHG emissions in the Environmental Checklist set forth in CEQA Guidelines Appendix G:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The adopted amendments do not establish a GHG emission threshold, and instead allow a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts.¹ The Natural Resources Agency also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions.²

SB 375

Senate Bill 375 (SB 375, Steinberg) was passed by the Legislature in August 2008 and signed by Governor Arnold Schwarzenegger on September 30, 2008. SB 375 addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. By September 30, 2010, CARB will assign regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. The targets are required to consider the emission reductions associated with vehicle emission standards (see SB 1493), the composition of fuels (see Executive Order S-1-07), and other CARB-approved measures to reduce GHG emissions.

¹ "The CEQA Guidelines do not establish thresholds of significance for other potential environmental impacts, and SB 97 did not authorize the development of a statement threshold as part of this CEQA Guidelines update. Rather, the proposed amendments recognize a lead agency's existing authority to develop, adopt and apply their own thresholds of significance or those developed by other agencies or experts" (California Natural Resources Agency, 2009) (p. 84).

² "A project's compliance with regulations or requirements implementing AB 32 or other laws and policies is not irrelevant. Section 15064.4(b)(3) would allow a lead agency to consider compliance with requirements and regulations in the determination of significance of a project's greenhouse gas emissions" (California Natural Resources Agency, 2009) (p. 100).

Regional metropolitan planning organizations (MPOs) will be responsible for preparing a Sustainable Communities Strategy within the Regional Transportation Plan. The goal of the Sustainable Communities Strategy is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If a Sustainable Communities Strategy is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. On September 23, 2010, CARB adopted the SB 375 targets for the regional MPOs. The targets for the eight San Joaquin Valley MPOs, including the Council of Fresno County Governments, are a 5% reduction in GHG emissions per capita by 2020 and a 10% reduction by 2035. Achieving these goals through adoption of a Sustainable Communities Strategy will be the responsibility of the MPOs.

Executive Order S-13-08

Governor Arnold Schwarzenegger issued Executive Order S-13-08 on November 14, 2008. The Executive Order is intended to hasten California's response to the impacts of global climate change, particularly sea level rise. It directs state agencies to take specified actions to assess and plan for such impacts. It directs the Natural Resources Agency, in cooperation with the Department of Water Resources (DWR), CEC, California's coastal management agencies, and the Ocean Protection Council, to request the National Academy of Sciences to prepare a Sea Level Rise Assessment Report by December 1, 2010. The Ocean Protection Council, DWR, and CEC, in cooperation with other state agencies, are required to conduct a public workshop to gather information relevant to the Sea Level Rise Assessment Report. The Business, Transportation and Housing Agency was ordered to assess the vulnerability of the state's transportation systems to sea level rise within 90 days of the Order. The OPR and the Natural Resources Agency are required to provide land use planning guidance related to sea level rise and other climate change impacts.

The Order also requires the other state agencies to develop adaptation strategies by June 9, 2009, to respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years. A discussion draft adaptation strategies report was released in August 2009, and the final adaptation strategies report was issued in December 2009. To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: public health, ocean and coastal resources, water supply and flood protection, agriculture, forestry, biodiversity and habitat, and transportation and energy infrastructure. The report then recommends strategies and specific responsibilities related to water supply, planning and land use, public health, fire protection, and energy conservation.

Executive Order S-14-08

On November 17, 2008, Governor Arnold Schwarzenegger issued Executive Order S-14-08. This Executive Order focuses on the contribution of renewable energy sources to meet the electrical needs of California while reducing GHG emissions from the electrical sector. The Order requires that retail

suppliers of electricity in California serve 33% of their load with renewable energy by 2020. Furthermore, the Order directs state agencies to take appropriate actions to facilitate reaching this target. The Natural Resources Agency is directed to lead this effort, through collaboration with the CEC and California Department of Fish and Game (CDFG). Pursuant to a Memorandum of Understanding between the CEC and CDFG creating the Renewable Energy Action Team, these agencies will create a “one-stop” process for permitting renewable energy power plants.

SB X1 2

On April 12, 2011, Governor Jerry Brown signed Senate Bill X1 2 (SB X1 2, Simitian) in the First Extraordinary Session, which would expand the Renewable Portfolio Standard by establishing a goal of 20% of the total electricity sold to retail customers in California per year, by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers covered by SB 107, SB X1 2 adds local publicly owned electric utilities to the Renewable Portfolio Standard. By January 1, 2012, the CPUC is required to establish the quantity of electricity products from eligible renewable energy resources to be procured by retail sellers in order to achieve targets of 20% by December 31, 2013; 25% by December 31, 2016; and 33% by December 31, 2020. The statute also requires that the governing boards for local publicly owned electric utilities establish the same targets, and the governing boards would be responsible for ensuring compliance with these targets. The CPUC will be responsible for enforcement of the Renewable Portfolio Standard for retail sellers, while the CEC and CARB will enforce the requirements for local publicly owned electric utilities.

3.7.3.3 San Joaquin Valley Air Pollution Control District

Climate Change Action Plan

On April 13, 2009, the OPR sent proposed amendments of the CEQA Guidelines to the Secretary of the Natural Resources Agency for promulgation. The proposed amendments require lead agencies (such as the SJVAPCD) to determine whether the GHGs generated by a proposed project would be significant, because of the individual project or in conjunction with the cumulative effects from the individual project and other projects.

In response to the amendments promulgated by OPR and the Natural Resources Agency, the Governing Board of the SJVAPCD adopted a Climate Change Action Plan in August 2008 (SJVAPCD, 2009). The Climate Change Action Plan directed the SJVAPCD to develop guidance to assist businesses, land use agencies, and other permitting agencies in addressing GHG emissions as part of the CEQA process.

Guidance for Valley Land Use Agencies

In December 2009, the SJVAPCD released the Final Staff Report Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act (SJVAPCD, 2009). The SJVAPCD determined that

GHG emissions from development projects (i.e., proposed residential, commercial, industrial, or governmental operations) primarily occur indirectly through energy consumption and VMT and these effects would need to be reduced for a project to have a less than significant cumulative effect on the environment.

The SJVAPCD GHG methodology relies on establishment of a Business-As-Usual (BAU) benchmark. BAU is referenced in CARB's AB 32 Scoping Plan as the BAU emissions occurring in 2020 if the average baseline emissions during the 2002-2004 period were grown to 2020 levels, without control. The 2011 Functional Equivalent Document for the 2008 Scoping Plan revised the baseline emissions dates to 2006-2008. Therefore, 2006-2008 emissions factors, on a unit of activity basis, multiplied by the activity expected to occur in 2020, is an appropriate representation of 2020 BAU (CARB, 2011). SJVAPCD would use a performance based standard of mitigation known as Best Performance Standards (BPS) but has developed BPS for only a handful of source categories. The BPS, when developed and adopted by the SJVAPCD, would be applicable to projects within the San Joaquin Valley Air Basin (SJVAB) that increase GHG emissions. Under the SJVAPCD Guidance, projects implementing BPS or achieving a 29% GHG emission reduction over BAU, would be determined to have a less than significant individual and cumulative impact for GHG impacts on global climate change and would not require project-specific quantification of GHG emissions. The SJVAPCD relied on the CARB 2008 Scoping Plan to establish its BAU for purposes of establishing baseline. The 2011 Scoping Plan uses the 2006-2008 period to calculate BAU and, in light of the current economic downturn, concludes that projected 2020 emissions are less than what was originally projected in the 2008 Scoping Plan. The 2011 Scoping Plan, therefore, modifies the required GHG reduction percentage from 29% to 16%.

Projects not implementing BPS would require quantification of project-specific GHG emissions unless an EIR is being prepared for a discretionary project in which case the Lead Agency is required to quantify GHG emissions regardless of whether BPS is incorporated into the project.

Rules and Regulations

The Project would be required to adhere to, and implement, all applicable SJVAPCD Rules, and it is recommended that compliance with these requirements be included as a Condition of Approval.

3.7.4 Thresholds of Significance

3.7.4.1 Appendix G Thresholds from the State CEQA Guidelines

Significant impacts to air quality from GHG emissions may result if the Project would:

- a) *Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or*
- b) *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.*

3.7.4.2 Additional Thresholds of Significance

SJVAPCD methodology discussed in Section 3.7.3.3 is used to evaluate the thresholds in the State CEQA Guidelines presented in 3.7.4.1.

3.7.5 Methodology of Analysis

The primary sources of GHG emissions from the Project would include the following:

- Mobile equipment.
- Stationary sources.
- On-road vehicles.
- Electricity use.
- Water use.

Mobile Equipment

The annual CO₂ emissions associated with operation of off-road mobile equipment in 2015 and for full project buildout in 2019 were calculated using OFFROAD2007 as described previously. The results were adjusted to estimate CH₄ and N₂O emissions in addition to CO₂. The CO₂ emissions from off-road equipment were adjusted by a factor derived from the relative CO₂, CH₄, and N₂O emission factors for diesel fuel as reported in the California Climate Action Registry's (CCAR) General Reporting Protocol (CCAR, 2009) for stationary engines (CO₂) and non-road engines (CH₄ and N₂O), which were then adjusted for their GWPs. The estimated GHG emissions from off-road mobile equipment are shown in Table 3.7-1.

Stationary Equipment

The annual CO₂ emissions from the asphalt drum dryer and hot oil heater in 2015 and 2019 were estimated using the CO₂ emission factors from AP-42, Section 11.1, for asphalt processing (EPA, 2004) and Section 1.5 for propane-fired boilers (EPA, 2008), respectively. The results were adjusted to estimate CH₄ and N₂O emissions in addition to CO₂. The CO₂ emissions from these devices were adjusted by a factor derived from the relative CO₂, CH₄, and N₂O emission factors for stationary propane fuel combustion as reported in the CCAR General Reporting Protocol (CCAR, 2009) for petroleum products, which were then adjusted for their GWPs.

On-Road Vehicle Emissions

The annual CO₂ emissions from motor vehicles (on-site trucks, material delivery trucks, aggregate and asphalt product trucks, outside services and miscellaneous visitor vehicles, and employee vehicles) in 2015 and 2019 were quantified using the EMFAC2011 model as described previously. The results were adjusted to estimate CH₄ and N₂O emissions in addition to CO₂. The CO₂ emissions from diesel-fueled trucks were adjusted by a factor derived from the relative CO₂, CH₄, and N₂O emission factors for diesel fuel as reported in the CCAR General Reporting Protocol (CCAR, 2009) for transportation fuels, which

were then adjusted for their GWPs. The CH₄ and N₂O emissions from employee vehicles and outside services and miscellaneous visitor vehicles³ were accounted for by multiplying the EMFAC2011 CO₂ emissions by a factor based on the assumption that CO₂ represents 95% of the CO₂E emissions associated with passenger vehicles (EPA, 2005).

Electrical Generation

Annual electricity use for the aggregate plant was based on the estimated horsepower ratings for aggregate process equipment and conveyors. The horsepower ratings of the equipment were converted to kilowatt-hours of annual operation based on (1) motor efficiency assuming the use of premium efficiency motors as will be required by the Federal Energy Independence and Security Act of 2007 as of December 2010, and (2) process capacity factors (annual process throughputs as a fraction of maximum hourly process rates times 8,760 hours per year) derived for 2015 and 2019.

Electrical use for the concrete plant was based on a review of electricity bills for the Builder's Concrete ready-mix plant in Sanger, California, performed by Buada Associates (Dudek, 2013a). The electrical usage was 2.72 kilowatt-hours per cubic yard of concrete produced. This value was applied to 50,000 cubic yards of production in 2015 and 150,000 cubic yards in 2019. Electrical use for the asphalt plant was based on typical use for an asphalt batch plant in Central California (Dudek, 2013a). The asphalt plant electrical usage is estimated to be 8 to 12 kilowatt-hours per ton of asphalt produced. For this analysis, the lower value was used because the proposed plant is required to use premium efficiency motors (see discussion above for the aggregate plant). This value was applied to 75,000 tons of production in 2015 and 250,000 tons in 2019.

The estimated annual electrical usage associated with the on-site office building was estimated using a usage factor for office buildings in the PG&E service area in the California Commercial End-Use Survey prepared for the CEC (Itron, Inc., 2006). Operation of the Project at buildout would consume approximately 2,475,790 kilowatt-hours per year in 2015 and 8,571,583 kilowatt-hours in 2019 (Appendix D). Generation of electricity through combustion of fossil fuels typically results in emissions of CO₂ and to a smaller extent CH₄ and N₂O. Annual electricity emissions were estimated using the reported CO₂ emissions per kilowatt-hour for PG&E, which would provide electricity for the project (PG&E, 2013). The contributions of CH₄ and N₂O for power plants in California were obtained from CCAR's General Reporting Protocol (CCAR, 2009), and were adjusted for their GWPs. Table 3.7-1 shows the estimated emissions of GHGs associated with electrical use by the Project.

Water Supply

Water supplied to the Project would be obtained from an on-site well, which would require the use of electricity. Annual electricity use for the Project's water supply was based on Riverbend's estimated

3 The outside services and miscellaneous visitor vehicles are assumed to be light-heavy-duty trucks, most of which are gasoline-fueled vehicles. The CO₂E correction for passenger vehicles, which are also mostly gasoline-fueled vehicles, was used because it is more conservative than that for diesel trucks.

water use in 2015 and 2019. Annual consumptive water use was estimated to be 50 acre-feet in 2015 and 178 acre-feet in 2019. The estimated electrical usage associated with water supply was obtained from a CEC report on electricity associated with water supply in California (CEC 2006). An electricity usage factor representing supply and conveyance of locally supplied water in Northern California was assumed to be applicable. Annual electricity emissions were estimated using the same factors as for other electricity use described above. Table 3.7-1 shows the estimated emissions of GHGs associated with water use by the Project.

Summary of Greenhouse Gas Emissions

Table 3.7-1 presents GHG emissions for the Project in 2015 and 2019. The Project is estimated to result in GHG emissions of 6,759 and 15,218 metric tons CO₂e in 2015 and 2019, respectively. The GHG emissions associated with the asphalt plant, off-road mobile equipment, and diesel trucks (on-site and off-site) account for 88% and 82% of the total project GHG emission in 2015 and 2019, respectively.

Table 3.7-1 also presents 2020 BAU and 2020 Project emissions because 2020 is the final year for implementation of measures described in the 2011 Scoping Plan. The 2020 BAU column presents emissions without Scoping Plan measures, electrified dragline and the conveyor system. The 2020 Project column presents emissions that incorporate reductions from the Low Carbon Fuel Standard (10% reduction over 2006-2008 emissions factors); the Renewable Portfolio Standard (RPS) (24% reduction over 2006-2008 emissions factors); the substitution of conveyor system for haul trucks; and electrification of the dragline are implemented. The Project results in 19% reduction of GHGs from BAU in 2020.

Table 3.7-1. Potential to Emit Greenhouse Gases

Source	2015 (MTCO ₂ e/yr)	2019 (MTCO ₂ e/yr)	2020 BAU (MTCO ₂ e/yr)	2020 Project (MTCO ₂ e/yr)
Asphalt Processing	2,360	5,316	5,316	5,316
Off-Road Equipment	1,478	952	3,239	857
Motor Vehicles – On-site				
Material and Product Diesel Trucks	70	215	239	215
Support Diesel Trucks	4.0	4.0	4.4	4.0
Support Light Pickup Trucks	1	<1	<1	<1
Outside Services and Visitors	<1	<1	<1	<1
Employee Vehicles	5.0	6.0	6.7	6.0
Motor Vehicles – Off-site				
Material and Product Diesel Trucks	2,017	6,040	6,711	6,040
Outside Services and Visitors	1.0	2.0	2.2	2.0
Employee Vehicles	76	90	100	90
Electrical Generation	718	2,484	2,484	2,129
Water Supply	31	109	109	83
Total	6,759	15,218	18,211	14,741
Percent Reduction from BAU				19%

Project Design Features, BMPs and Environmental Protection and Minimization Measures

- The Project is proposed for a site within the same or closer proximity to the market than alternate sources of aggregates that are known to service the market.
- The Project would use electricity to power the dragline and conveyor system that excavate and transport materials to the processing plant.

Regional View of Aggregate Demand

Global climate impacts are substantially driven by population growth which correlates to growth in demand for aggregate and related construction materials. Increased population, therefore, is the underlying trigger to any GHG emission associated with a proposed aggregate mining and processing facility.

“The assumption that each person will use a certain amount of aggregate every year is a simplification of actual usage patterns, but overall, an increase in the population leads to the use of more aggregate. Over long enough periods, perhaps 20 to 30 years or more, the random impacts of major public construction projects and economic recessions tend to be smoothed and consumption trends become similar to historic per capita consumption rates. Per capita consumption is a commonly used and accepted national, state, and regional measure for purposes of forecasting.” (CGS, 2012, p. 5).

As discussed in *Environmental Costs of Aggregate* (Berck, 2005), demand for aggregate is inelastic. Inelastic demand means that an increase or decrease in the price of aggregate has little or no effect on the quantity of aggregate demanded by consumers.

“Transportation plays a major role in the cost of aggregate to the consumer. Aggregate is a low-unit-value, high-bulk-weight commodity, and it must be obtained from nearby sources to minimize both the dollar cost to the aggregate consumer and other environmental and economic costs associated with transportation. If nearby sources do not exist, then transportation costs may significantly increase the cost of the aggregate by the time it reaches the consumer.” (CGS, 2012, p. 18). “The importation of aggregate from neighboring regions typically results in longer haul distances, higher costs, and increased carbon dioxide emissions, air pollution, traffic congestion, and highway maintenance.” (CGS, 2012, p. 10).

As local sources of aggregate are depleted and aggregate is hauled longer distances to the consumer, prices will increase. Given aggregate’s inelastic demand, however, increased prices will not reduce the demand for aggregate. Conversely, a new aggregate mine that increases local aggregate supply and lowers local aggregate prices by reducing haul distances would have little effect on aggregate demand and, therefore, little effect on use or production.

Fair Share Amount of Forecasted Regional Aggregates Demand

The effect of acknowledging the regional baseline and attributing only the Project's fair share of new trips to the Project results in the reasonably foreseeable change in regional emissions of GHG with respect to the regional baseline levels. This approach produces an emissions estimate for off-site transportation that is 15.8% of the potential to emit value presented in Table 3.7-1. Supporting calculations are presented in Appendix H and discussed below.

First, the VMT was determined for the maximum throughput of 1.25 MMtons/yr as shown in Table 3.7-2 based on the trip distances provided in Table 2-4. The amount of aggregates related VMT was determined to be 80% and the VMT attributed to other materials was determined to be 20%.

Table 3.7-2. Potential to Emit Annual VMT at 1.25 MMtons/yr Production

Aggregates Trip Types	(VMT/yr)	Other Trip Types	(VMT/yr)
Aggregates	1,530,000	Asphalt Binder Import	129,630
Aggregates in HMA	475,000	Asphalt Binder in HMA	25,000
Aggregates in RMC	773,437.5	Cement/Supplements Import	378,611
		Cement/Water in RMC	164,062.5
		Propane	1,817
		Diesel	375
		Other	2,145
Total	2,778,437.5	Total	701,640.5
	80%		20%

Next, the VMT related is reduced to account for baseline levels and the fact that increased production at the Project will initially substitute for materials produced elsewhere until either existing permitted reserves are depleted (i.e. Project share of market increases) or the regional aggregates demand increases; or both. This is true because aggregate is a commodity that is produced regionally in Production-Consumption (P-C) Regions that are considered to be self-contained.

Finally, the adjusted VMT for aggregates is multiplied by 1.25 (i.e. 100% plus 20% of 80%) so that the VMT from other types of trips that are required to produce the Project's fair share of increases in aggregates and related materials are incorporated into the total vehicular GHG emissions attributable to the Project.

The P-C Region consists of Fresno and Madera counties. P-C Regions are established for areas within which the aggregates production and consumption balance (i.e., not much "leakage" across P-C Region boundaries). Historically, the long term average amount of aggregates used within a P-C region has been shown to be proportional to the population in the region.

Introduction of a new source of aggregate does not increase the consumption of aggregate because the demand for aggregate is inelastic. Therefore, the amount of aggregate consumed is independent from the number of available aggregate resources. In the first years of a project it is foreseeable that the aggregate will primarily substitute for aggregates produced elsewhere in the baseline. Early in the Project the majority of truck trips will not be new trips.

However, the consumption of aggregate increases as time progresses because the population in the P-C Region is increasing. The California Geological Survey has determined that 5.57 tons per person per year are used in the P-C Region. The Region is estimated to have 1,137,162 residents in the Year 2014 before the Project would begin. This would correspond to a demand of 6,333,932 tons per year in 2014.

Between 2014 and 2015, the population of the P-C Region is forecasted to grow to 1,150,526 residents and the aggregates market size is forecasted to be 6,408,431 tons per year; an increase of 72,439 tons per year. CEQA would require assessment of the impact of the amount that exceeds baseline. In 2015 the Project would produce 350,000 tons per year which constitutes 5.5% of the market. Thus, the Project's fair share of the increase in regional aggregates use would be 5.5% of 72,439 tons; or 4,066 tons per year. This amount corresponds to 8,131 VMT/yr and 16 MTCO₂e/yr from truck travel as compared to the potential to emit which would be approximately 86 times greater. An additional 25% of VMT is added to account for other types of trips involved in producing the Project's fair share of aggregates and related products. Potential to emit is not considered because the majority of the production and VMT occurs in the baseline or can be attributed to others.

By 2020, the population of the P-C Region is forecasted to grow to 1,256,784 residents and the aggregates market size is forecasted to be 7,000,287 tons per year which is an increase of 666,295 tons per year. The Project would produce 1,250,000 tons per year which constitutes 17.9% of the market. Thus, the Project's fair share of the increase in regional aggregates use would be 17.9% of 666,295 tons; or 118,976 tons per year. This amount corresponds to 237,953 VMT/yr and 409 MTCO₂e/yr from truck travel as compared to the potential to emit which would be 10.5 times greater (i.e. $1.25 \text{ MMton/yr} \div 25 \text{ ton/load} \times 2 \text{ trip/load} \times 25 \text{ VMT/trip} = 2,500,000 \text{ VMT}$). Adding 25% of VMT to account for other types of trips involved in producing the Project's fair share results in 298,043 VMT/yr or and 570 MTCO₂e/yr.

Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

As discussed in previous sections, Calaveras Materials Inc.(CMI) currently operates the Kings River Sand and Gravel mining operation under CUP 3052 adjacent to the Project site. The CMI project, SCH# 2004081114, was subject to its own EIR certified on August 8, 2008. Although preliminary in concept, future operators of CUP 3052 may be interested in an agreement with Riverbend to mine Phases 6A, 6B and 7 and process the excavated material at the CUP 3052 plant. If this agreement were to be made and CUP 3052 was amended to utilize material from Riverbend the materials from Phases 6A, 6B and 7 would still be excavated by an electric dragline following overburden removal by off-road equipment and transported to the CUP 3052 plant by electric conveyor. The CUP 3052 plant would continue to

operate as it had in the past with the same exact emissions, except with materials excavated from Riverbend.

Once the Riverbend processing plant is in operation the CUP 3052 plant and the Riverbend plant would be operational. Both plants will continue to operate even if materials from Phases 6A, 6B and 7 are processed at the CUP 3052 plant. Processing material from Phases 6A, 6B and 7 at the CUP 3052 plant would not increase production levels at the CUP 3052 plant because CUP 3052 limits production to one million tons/yr. The CUP 3052 plant would still have to operate in compliance with its Permit to Operate from the SJVAPCD and the CUP 3052 mitigation measures would still be in place (e.g. compliance with SJVAPCD's Regulation VIII to reduce PM10 emissions). Therefore GHG impacts at CUP 3052 and the Riverbend processing plants and excavation would not change or increase by processing Phases 6A, 6B and 7 materials at the CUP 3052 plant. The Riverbend EIR analyzes Riverbend impacts and cumulative impacts of both and the CMI EIR analyzed the impacts of the CMI plant. Thus, the Project impacts as analyzed in this DEIR conservatively represent both the conditions under the proposed Project and under a Project with the processing of materials from Phases 6A, 6B and 7 at the CUP 3052 plant.

3.7.6 Project Level Impacts and Mitigation Measures

3.7.6.1 Issues Found to Have No Impact

No GHG issue falls into this category. Some level of impact would occur for each GHG issue.

3.7.6.2 Project Emissions Effect on the Environment

Impact Statement

Impact GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (CEQA Guidelines Threshold Criteria (a))

Impact Analysis

Climate change is a cumulative effect. District staff concluded in their Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD, 2009) that: "existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change. This is readily understood when one considers that global climatic change is the result of the sum total of GHG emissions, both man-made and natural that occurred in the past; that is occurring now; and will occur in the future. The effects of project specific GHG emissions are cumulative, and unless reduced or mitigated, their incremental contribution to global climatic change could be considered significant. District staff concludes that this cumulative impact is best addressed by requiring all projects subject to CEQA to reduce their GHG emissions through project design elements." An amount which is cumulatively considerable is contained in applicable plans and assessed in Section 3.7.6.3.

Level of Significance before Mitigation

The impact of Project emissions on climate change is less than significant.

Mitigation Measures

Mitigation is unnecessary because the Project impact is less than the level of significance.

Level of Significance after Mitigation

Not applicable. The Project impact is less than the level of significance without mitigation.

3.7.6.3 Consistency with Applicable Plans and Rules**Impact Statement**

Impact GHG-2: Would the project potentially conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (CEQA Guidelines Threshold Criteria b))

Impact Analysis

The 2020 BAU forecast was updated in the Final Supplement to the Scoping Plan Functionally Equivalent Document (CARB, 2011) such that the proposed amount of reduction required to achieve 1990 levels of emissions is a 16% reduction based on the 2006-2008 BAU rather than 29% reductions based on the 2002-2004 BAU, which was in the 2008 Scoping Plan and the amount used by SJVAPCD in developing its GHG impact thresholds. As mentioned above, the 2011 Scoping Plan has been approved by CARB. As such, based on SJVAPCD's reliance on the 2008 Scoping Plan in establishing baseline, the BAU and emissions reductions analyzed herein are based on the BAU as defined in the 2011 Scoping Plan, and the 16% GHG emissions reduction goal. In addition, not all sectors achieve the same level of reduction in the Scoping Plan (2008 and 2011 supplement) as the entire State. Therefore, transportation and electricity sectors make greater reductions in emissions while industrial sector sources are assumed to make lesser reductions. The industrial sector GHG reductions basically offset future growth so that emissions levels in the industrial sector remain constant.

Electricity use would be a source of GHG emissions from the Project. Because electricity use is a major operative cost, electricity use would be minimized to the extent feasible by the Operator. In addition, the electricity sector will be required to comply with the RPS which requires 33% renewable energy by 2020. The Scoping Plan forecasts that increasing renewable energy to 33% will reduce GHG emissions from electricity generation by approximately 24% as compared to the 12% renewables in the market during the baseline years.

Diesel fuel use in off-road equipment would be a source of GHG emissions from the Project. To reduce operating costs, fuel use would be minimized to the extent feasible by the Operator. In 2019, the Project

proposes to replace the haul truck(s) with a conveyor which is less carbon intensive. In the 2015 Scenario, the haul trucks feed the aggregates plant to produce 350,000 tons/yr while emitting 461 MTCO₂e/yr (Appendix H). Scaling the emissions with 1,250,000 tons/yr predicts that removal of the haul trucks would result in 1,524 MTCO₂e/yr reduction in GHG emissions from 2020 BAU while increased electricity use would result in approximately 35% of the emissions calculated for the aggregates processing plant (2,150,445 kW-hr/yr) or 623 MTCO₂e/yr. Similarly, electrification of the dragline would result in reduce GHG emissions from fuel burning (762 MTCO₂e/yr) and increase GHG emissions from electricity generation (312 MTCO₂e/yr). In addition, other off-road units would have emissions reduced by 10% over 2020 BAU by the LCFS.

Diesel fuel use in on-road haul trucks is largely outside of the control of the Project and arguably not induced by the Project when considered cumulatively with all loads of construction materials within the region. Nevertheless, the LCFS would reduce GHG emissions from haul trucks by 10%.

Appendix H contains calculations for the Project's fair share of new aggregate trips and related GHG emissions. The BAU method implemented by SJVAPCD includes future growth, 16% less than BAU is a greater amount of reduction than 16% from the existing physical setting. Thus, the BAU approach should be conservative in this case. Population was assumed to grow at rates reported by the California Department of Finance (DoF) forecast through 2060 (DoF, 2013). Since aggregate demand has a linear correlation with population, the number of truck trips within the County will increase the same percentage as will the GHG emissions.

In California, the supply and demand for aggregate resources are tracked by the California State Department of Conservation's California Geological Survey (CGS). The CGS regularly analyzes the supply and demand of aggregate resources in California, and publishes reports indicating the past consumption and anticipated future demand for regional aggregate supplies. The various regions studied throughout the state are market areas referred to as "Production-Consumption Regions." The Project is in the Fresno Production-Consumption (P-C) Region which services the needs of portions of central and eastern Fresno County and portions of southern Madera County. According to the California Department of Finance, population in the region is expected to nearly double in the next 50 years from 1,083,705 in 2010 to 1,989,331 in 2060 (Appendix H).

The CGS report titled *Aggregate Availability in California – Map Sheet 52* (updated 2012) uses the Department of Finance future population estimates and historical per capita consumption to estimate future demand. Map Sheet 52 indicates that the P-C Region's projected 50-year aggregate demand as of January 1, 2011 was approximately 435 million tons (MMtons). Existing permitted reserves at that time were indicated to be 46 MMtons. However, that estimate did not include the 63 MMtons approved for the Sanger-Centerville Expansion (Vulcan Materials Company) in 2007 or the 50 MMtons approved for the Madera Quarry (Shimmick Construction) in Madera County in 2010. In 2012, the Carmelita Mine and Reclamation project (Colony Land Company) was approved for 85 MMtons. Those three projects added 198 MMtons (net finished aggregate product) of permitted reserves to the P-C Region. Without

adjusting for reserves consumed since January 1, 2011, total permitted reserves in the P-C region would be 244 MMtons.

In 2010, Map Sheet 52 indicated that the P-C Region consumed approximately 6.0 MMtons per year (MMtpy). At that consumption rate for the four-year period of 2011 through 2014, approximately 24 MMtons of permitted reserves would have been consumed, leaving 220 MMtons of permitted reserves at the beginning of 2015, or approximately 50% of the 50-year demand.

The Riverbend Project, if approved, would add 70 MMtons, increasing the permitted reserves to 296 MT, or 68% of the 50-year demand. If the proposed Austin Quarry project in Madera County is approved, it would add 250 MMtons and bring total permitted reserves in the region to 540 MMtons. Future consumption of permitted reserves is affected by the maximum annual sales permitted for each site and annual consumption rates as described in the following two scenarios. Table 3.7-2 shows the existing permitted aggregate operations in the Fresno plus it assumes Austin Quarry and Riverbend were both permitted. If Austin Quarry and Riverbend were both approved, annual permitted sales would be 10.4 MMtpy. (Central Valley RM & River Rock annual sales are not included in the total since their permits expire in 2015 and 2016 respectively.)

Assuming that Carmelita, Riverbend and Austin Quarry are fully operational in 2015, and that annual sales would equal the permitted annual sales, consumption between 2015 and the next 50 years would be as follows (not all mine projects are permitted, so this assumption assumes a maximum reserve scenario):

- 2023 (in 8 yrs): Rockfield permit expires, 83 MMtons would be consumed, and annual permitted sales would drop to 9.4 MMtons.
- 2043 (in 29 yrs): CMI permit expires, an additional 188 MMtons would be consumed, and annual permitted sales would drop to 8.4 MMtons.
- 2060 (in 45 yrs): Sanger reserves would be depleted, an additional 143 MMtons would be consumed, and annual permitted sales would drop to 5.9 MMtons.
- 2065 (in 50 yrs): Madera Quarry's reserves would be depleted, an additional 30 MMtons would be consumed, and annual permitted sales would drop to 5.0 MMtons.

Total consumption for the next 50 years would be 444 MMtons or 9 MMtons more than the 435 MMtons projected in Map Sheet 52. The remaining permitted reserves would be 96 MMtons. However, at the annual consumption rate of 11 MMtpy in 50 years, as estimated by Map Sheet 52, there would be less than 9 years of reserves remaining.

It should be noted that the 50-year demand is simply a measuring tool and not a limit. In a healthy supply and demand market, having more than 50 years of permitted reserves would provide more sources for aggregate products and should result in more competitive pricing for the consuming public.

Table 3.7-3. Maximum Permitted Sales from Mines in the Region

Operation	Maximum Annual Sales Permitted (MMtpy)
Cent. Valley RM (Sante Fe) ¹	Negligible
River Rock (Vulcan) ²	1.0
Rockfield (Cemex) ³	1.0
Kings River (CMI) ⁴	1.0
Sanger (Vulcan) ⁵	2.5
Madera Quarry ⁶	0.9
Carmelita ⁷	1.25
Austin Quarry ⁸	2.5
Riverbend ⁸	1.25
Total	10.4⁹

¹. Permit expires in 2015². Permit expires in 2016³. Permit expires in 2023⁴. Permit expires in 2043⁵. Reserves depleted in 2059⁶. Reserves depleted in 50 years⁷. Not yet operational⁸. Proposed⁹. CVRM & River Rock not included since their permits expire in 2015 and 2016 respectively.

In order to meet the required specifications for the broad range of aggregate products needed in the construction materials market, there needs to be a suitable balance of available rock and sand, roughly in the 50% rock/50% sand ratio. However, it appears that future market supply in the region may hit an imbalance with far more rock in supply than sand. This is primarily based on greater hard rock resources being developed and permitted than that of alluvial deposits, which contain natural sand resources as well as rock. If the proposed Austin Quarry project in Madera County is approved, 300 MMtons (Madera Quarry 50 MMtons + Austin Quarry 250 MMtons), or 55% of the 546 MMtons of the region's reserves, would be from hard rock quarries, creating an imbalance in the rock to sand regional production. Technology allows for the production of sand from rock; however this process is more expensive than the washing and processing of natural sand. Manufactured sand is not the desired product by the local Ready-Mix Concrete (RMC) producers or users. Producers of RMC have traditionally paid more and travelled great distances for natural concrete sand, as compared to manufactured sand, as it flows better, is easier to pump, and in some cases requires less cement. With 55% of the local operations being rock reserves, natural occurring sand from the alluvial deposit on the Project site on the Kings River will be critical to meet the sand demand for the region, and governmental agencies like Caltrans and the Fresno County Department of Public Works.

As discussed in text following Table 3.7-1, Project production levels are a fraction of the total production within the Region and thus the Project would be responsible for its fair share of future growth in aggregate transportation and 100% of emissions from the transportation of other materials. Recycle related trips are excluded from project share assessment primarily because the Project does not induce the generation of recyclables (i.e., the Project is not a construction project that involves demolition of

structures or roads) and creating a new location would shorten trips (i.e., the greater number of sites available to accept and process recyclables, the shorter the average trip of recyclable's will be). Table 3.7-3 presents the amount of increase in GHG emissions that is reasonably foreseeable and attributable to the Project.

Table 3.7-3 shows that, with credit given for replacing haul trucks with a conveyor, electrifying the dragline and considering regional aggregates market conditions (i.e. demand is inelastic and there will be substitution of trips occurring in the baseline), the Project would result in overall reduction of greater than 16% from BAU in 2020. As discussed previously, BAU would not include reductions from the Low Carbon Fuel Standard (10%), the Renewable Portfolio Standard (24%), and electrification of haul truck and dragline. In addition, credit was not taken for co-locating the concrete plants with the mine. This is a design feature of the Project that reduces emissions by eliminating on-road truck travel.

Given the conservative nature of assumptions and the omission credit that could have been taken for potential reductions, the actual emissions likely would be less than estimated. Accordingly, the Project impact on GHG emissions is determined to be consistent with the 2011 Scoping Plan and AB 32. The Project would have a less than significant impact from GHG emissions.

Table 3.7-4. Reasonably Foreseeable Increase in Greenhouse Gases

Source	2020 BAU (MTCO ₂ e/yr)	2020 Project (MTCO ₂ e/yr)	Percent Change
Asphalt Processing	5,316	5,316	0%
Off-Road Equipment	3,239	857	74%
<i>Motor Vehicles – On-site</i>			
Material and Product Diesel Trucks	215	194	10%
Support Diesel Trucks	4	4	10%
Support Light Pickup Trucks	<1	<1	10%
Outside Services and Miscellaneous Visitor Vehicles	<1	<1	10%
Employee Vehicles	6	5	10%
<i>Motor Vehicles – Off-site</i>			
Material and Product Diesel Trucks	1,062	956	10%
Outside Services and Miscellaneous Visitor Vehicles	2	2	10%
Employee Vehicles	90	81	10%
Electrical Generation	2,484	2,129	14%
Water Supply	109	109	0%
Total	12,527	9,652	23%

Level of Significance before Mitigation

The Project is consistent with applicable plans, policies and regulations such that the Project impact is less than significant.

Mitigation Measures

Mitigation is unnecessary because the Project would reduce GHG emissions consistent with applicable plans policies and regulations. Use of a conveyor by 2019 is a mitigation measure for this project.

Level of Significance after Mitigation

The Project impact is less than the level of significance.

3.7.7 Cumulative-Level Impacts and Mitigation Measures

The geographic context for cumulative analysis of GHG emissions could be considered as small as the air basin and as large as the world. For purposes of this DEIR, the geographic setting is the State of California. The potential cumulative impacts associated with CEQA Thresholds a) and b) are discussed below.

Would the Project, when considered in conjunction with other cumulative projects, generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? (CEQA Guidelines Threshold a)

Cumulative Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel and Santa Fe Aggregates in Table 3-1) have completed the entitlement phase and appropriate approvals have been received from the County. It was also determined that these projects would not conflict with applicable climate change plans. Cumulative Projects 5 through 7 (Sanger Crossing Apartment, Pitman farms, and Family Dollar Store in Table 3-1) are still in the entitlement process and being evaluated.

The SJVAPCD has developed a project-level GHG impact assessment methodology based upon consistency with reductions adopted in the AB 32 Scoping Plan. The Scoping Plan contains GHG emissions reduction measures affecting sources at industrial, commercial, and residential developments. As discussed in Section 3.7.3.3, 16% reduction from BAU in Year 2020 is the current threshold of significance for projects of all types within SJVAPCD and used in this DEIR.

The threshold of significance is based upon the Scoping Plan which considers existing and future sources. No Cumulative Project from Table 3-1 is listed in the AB 32 Scoping Plan or any other climate change plan. Nevertheless, each project would be doing its fair share to reduce the cumulative effect of climate change if it is able to show consistency with the AB 32 Scoping Plan.

As discussed in Section 3.7.6.3, the Project emissions would be consistent with the AB 32 Scoping Plan. Consistency with the Scoping Plan is equivalent to a less than cumulatively considerable impact as discussed by SJVAPCD.

“Projects exempt from the requirements of CEQA, and projects complying with an approved GHG emission reduction plan or mitigation program would also be determined to have a less than significant individual or cumulative impact.... Projects not

implementing BPS [Best Performance Standards] would require quantification of project specific GHG emissions. To be determined to have a less than significant individual and cumulative impact on global climate changes, such projects must be determined to have reduced or mitigated GHG emissions by 29%, consistent with GHG emission reduction targets established in ARB's AB 32 Scoping Plan." (SJVAPCD, 2009).

The 29% value was reduced to 16% by updated assumptions and baseline in the Functional Equivalent Document (CARB, 2011). The Scoping Plan is an approved GHG emissions reduction plan and SJVAPCD has determined that consistency with the Scoping Plan percent reduction from 2020 BAU would result in less than significant individual and cumulative impact. Project GHG reductions from 2020 BAU exceed the 16% reduction prescribed by the Scoping Plan and Functional Equivalent Document. Therefore, the Project is not cumulatively considerable and the impact is less than significant.

Would the Project, when considered in conjunction with other cumulative projects, conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs? (CEQA Guidelines Threshold b)

As discussed directly above and in Section 3.7.6.3, the Project emissions would be consistent with the AB 32 Scoping Plan. Therefore, the Project is not cumulatively considerable and the impact is less than significant.

3.7.8 Alternatives to Significant Effects

No Project Alternative

The Project GHG impact would be less than the GHG impact from the No Project Alternative because the Project is in closer proximity than the other sources of aggregates known to serve the market. The Project would use an electric dragline and conveyor system for excavation and transport of material to the processing plant. Most other sources excavate with diesel fueled vehicles and many also transport material to the processing plant in diesel fueled trucks. Combustion of diesel fuel results in greater GHG emissions than electricity use. Material produced by the Project would substitute for material produced elsewhere. The Project would only need to emit less than the highest emitting alternate source in order to be the superior alternative.

Reduced Annual Production Alternative

The Project GHG impact would be less than the GHG impact from the Reduced Annual Production Alternative for the same reasons that are discussed for the No Project Alternative above.

Reduced Project Size Alternative

The Project GHG impact is equal to or less than the GHG impact from the Reduced Project Size Alternative. Reducing the footprint would reduce GHG emissions from the Project by limiting the duration of the Project but would not reduce the annual emissions upon which GHG impact significance

is determined. Depending on the relative proximity of alternative aggregates sources to the market many years from now, material may travel longer distances resulting in greater GHG impacts than would occur with the Project

Reduced Mining Depth Alternative

The Project GHG impact is equal to or less than the GHG impact from the Reduced Mining Depth Alternative for the same reasons that are described for the Reduced Project Size Alternative above.

Different Phasing Alternative

The Project GHG impact is equal to the GHG impact from the Different Phasing Alternative because the project footprint, depth of mining, annual production rate, and duration of the Project would remain the same.

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3.8 HAZARDS & HAZARDOUS MATERIALS

3.8.1 Introduction

The purpose of this section of the DEIR is to describe any potential hazards that currently exist in the area surrounding the Project site, or that could exist as a result of implementing the Project, and recommend mitigation measures to reduce any potentially significant impacts.

The primary sources used in this analysis were the Operational Statement Riverbend Sand and Gravel Project prepared by Buada Associates (Buada Associates, 2013), the Surface Mining and Reclamation Plan Riverbend Sand and Gravel Project prepared by Buada Associates (Buada Associates, 2013), the Riverbend Sand and Gravel Surface Runoff and Drainage Plan prepared by Chang Consultants (Chang Consultants, 2013) and the Carmelita Mine and Reclamation Bird Aircraft Hazard Report (ESR, Inc. 2012).

3.8.2 Environmental Setting

3.8.2.1 Regional Setting

The Project site is located within unincorporated Fresno County in the easterly portion of the San Joaquin Valley. Non-urban land use in this region is characterized by agricultural land uses. The City of Reedley is located approximately 5.75 miles to the southeast, and the City of Sanger is located approximately 1.5 miles to the northwest.

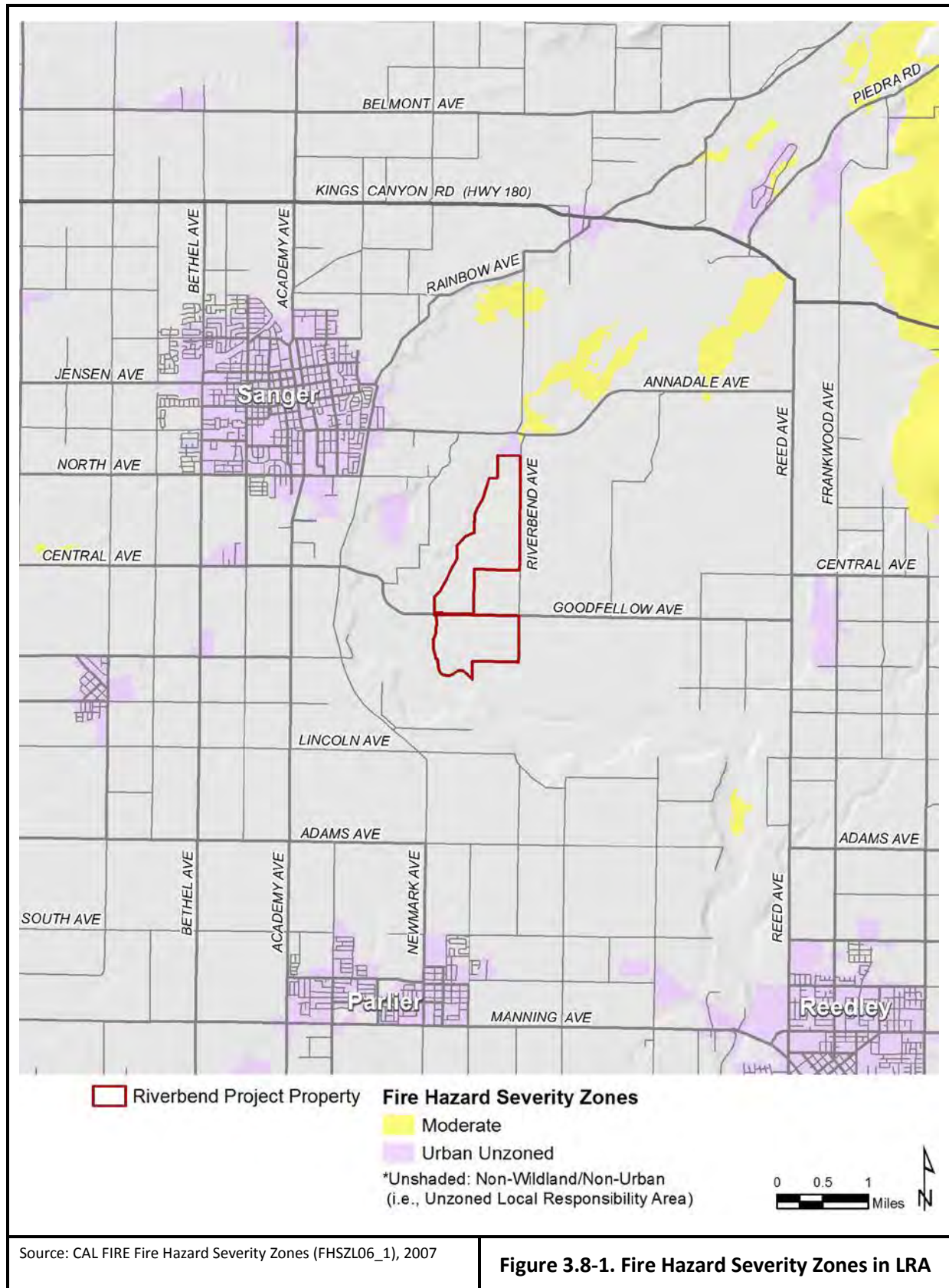
3.8.2.2 Vicinity Setting

Surrounding land uses in the Project site vicinity include: an aggregate mining operation with a ready-mix concrete plant to the north; an aggregate mining operation, approved to include a ready-mix concrete plant, to the east and southeast; large-lot, low-density rural residences, ranches, agriculture and farms located to the east and across the Kings River to the west and south; and stone fruit orchards with several farm residences located on the northwest corner of Goodfellow Avenue and Riverbend Avenue.

There are no listed hazardous waste sites in the immediate vicinity of the Project site.

3.8.2.3 Project Site Setting

The Project site is currently occupied by walnut and olive orchards and grape vineyards. There are three residential structures and associated outbuildings located on the Project site which were constructed prior to 1980. The current use of hazardous materials at the Project site is consistent with general agricultural activities and typically includes fertilizers, pest control supplies, and equipment/vehicle maintenance supplies.



As shown on Figure 3.8-1, the Project site is not located within an area of Fresno County designated by the California Department of Forestry and Fire Protection (CalFire) as a wildland area that may contain substantial forest fire risks and hazards. In addition, CalFire has determined that Fresno County does not have any very high fire hazard zones in the local responsibility area (LRA) where the Project is located. There are no high-voltage power lines located on the Project site.

Fresno County is among the counties listed as containing serpentine and ultramafic rock (OPR, 2000) which presents a concern regarding the presence of naturally occurring asbestos. However, no serpentine or ultramafic rock has been found on the Project site.

The Project is located more than 3 miles away from the nearest public airport, the Reedley Municipal Airport and not in the takeoff or landing flight path for the airport.

3.8.3 Regulatory Setting

A number of Federal, State, and local laws have been enacted to regulate the management, use, storage, treatment, transport and disposal of hazardous materials and hazardous wastes (referred to jointly as hazardous materials). An overview of the key hazardous materials laws and regulations that apply to the Project is provided below.

3.8.3.1 Federal

Resource Conservation and Recovery Act (RCRA)

RCRA (42 U.S.C. §6901 et seq.) regulates hazardous waste from the time that the waste is generated through its management, storage, and treatment until its final disposal. RCRA regulations address numerous aspects of hazardous waste management, including determination of hazardous waste, containment requirements, inspections, training, spill response, contingency plans, treatment, disposal, recycling, reporting and additional other areas of hazardous waste management. RCRA was amended in 1984 with the passing of the Federal Hazardous and Solid Waste Amendments (HSWA). These amendments to RCRA required phasing out land disposal of hazardous waste. Some of the other mandates of HSWA include increased enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program. The U.S. EPA has authorized the California Department of Toxic Substance Control (DTSC) to administer the RCRA program in California.

Oil Pollution Prevention

The Oil Pollution Prevention regulation (40 CFR §112 et seq.) establishes procedures, methods, equipment and other requirements to prevent the discharge of oil and oil products from non-transportation related facilities into the waters of the United States. The regulation applies to facilities engaged in, among other activities, storing, processing, using or consuming oil and oil products. If specified storage thresholds are triggered, a Spill Prevention, Control and Countermeasure (SPCC) Plan must be prepared and implemented.

Facilities with a single tank or cumulative aboveground storage capacities of 1,320 gallons or greater of petroleum are required to prepare an SPCC plan. Exceptions to this rule include farms, nurseries, logging and construction sites, so long as these businesses have a total storage capacity of less than 100,000 gallons or if the individual storage tanks are less than 20,000 gallons.

Occupational Safety and Health Act (OSHA)

OSHA (29 U.S.C. §651 et seq.) and federal occupational safety and health regulations (29 CFR §1910 et seq.) contain provisions for managing hazardous materials. OSHA promotes worker safety, worker training, and worker right-to-know. Hazardous Waste Operations and Emergency Response (HAZWOPER) training is required for workers who handle hazardous materials, as appropriate for their job description and responsibilities. In the State of California, the Division of Occupational Safety and Health (Cal/OSHA) implements OSHA requirements.

Emergency Planning and Community Right-to-Know Act (EPCRA)

EPCRA (42 U.S.C. §11001 et seq.), which is also known as Title III of the Superfund Amendments and Reauthorization Act (SARA), helps communities protect public health, safety and the environment from chemical hazards. EPCRA provides the requirements for emergency release notification, chemical inventory reporting and toxic release inventories for facilities that handle chemicals over certain thresholds.

Mine Safety and Health Act (MSHA)

MSHA (30 U.S.C. §801 et seq.) requires that the Mine Safety and Health Administration inspect each surface mine at least two times a year to determine compliance with health and safety standards and whether an imminent danger exists. MSHA also requires rigorous training and education programs for employers and employees in the mining industry.

U.S. Department of Transportation (DOT)

DOT regulates the transportation of hazardous materials. DOT regulations (CFR Title 49) include requirements that companies transporting hazardous materials maintain a current DOT HAZMAT Certification Registration and implement a drug screening program. DOT also has stringent standards for all vehicles that transport hazardous materials as well as the hazardous waste containers used during transportation.

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

FIFRA (7 U.S.C. §136 et seq.) is administered by EPA and is the major Federal statute governing pesticide use. FIFRA grants primary, but not exclusive, enforcement responsibility to the states. California has many laws designed to control the use and disposal of insecticides, pesticides and rodenticides. Agricultural water quality issues involving these materials are generally handled by the Regional Water Quality Control Board (RWQCB), the Department of Pesticide Regulation and County Agricultural Commissioners, as directed by the Porter-Cologne Water Quality Control Act.

3.8.3.2 State

Surface Mining and Reclamation Act (SMARA)

SMARA (Cal Pub. Resources Code §2710 et seq.) provides a comprehensive set of regulations for surface mining and reclamation to ensure that adverse environmental and safety impacts are minimized and that mined lands are reclaimed to a usable and safe condition.

California Occupational Safety and Health (Cal/OSHA) Mine Safety Orders

The Cal/OSHA Mine Safety Orders (8 CCR §6950 et seq.) regulate the safe operation of mining activities including:

- Article 4: Accident Prevention Program;
- Article 6: General Safety Precautions;
- Article 11: Materials – Storage and Handling;
- Article 12: Ground Control;
- Article 15: Mining Equipment and Practices;
- Article 17: Loading, Hauling, and Dumping;
- Article 22: Fire Prevention and Control; and
- Article 40: Inspections.

Hazardous Waste Control Law (HWCL)

The California Environmental Protection Agency (CalEPA) has established regulations governing the use of hazardous materials in the State. Within CalEPA, the DTSC has primary hazardous materials regulatory responsibility, but can delegate enforcement responsibilities to local jurisdictions. State environmental health standards applicable to hazardous waste are contained primarily in Division 4.5 of Title 22 of the CCR. Title 26 of the CCR is a compilation of those chapters or titles of the CCR that are applicable to hazardous materials management.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (“the Unified Program”) (Cal. Health & Safety Code §25404 et seq.; 14 CCR §15100 et seq.) allows certain State laws and regulation to be implemented by local governmental agencies that are certified by CalEPA. The local agencies are referred to as the Certified Unified Program Agency (CUPA). The CUPA is responsible for implementing a unified hazardous materials and hazardous waste management program. The Fresno County Environmental Health Division (FCEHD) is the designated CUPA in Fresno County. The FCEHD provides oversight of the following programs:

- Hazardous Materials Release Response Plans and Inventories (Business Plans): The California Office of Emergency Services (OES) established the Business Plan Program (19 CCR §2620 et seq.) to prevent or minimize the damage to public health and safety and the environment from a release or threatened release of hazardous materials, and to satisfy community right-to-know

laws. This is accomplished by requiring businesses that handle hazardous materials over threshold quantities to prepare a Hazardous Materials Business Plan that includes a hazardous materials inventory, a site map identifying the location of hazardous materials storage, an emergency response and spill prevention plan, and a training program. The Business Plan must be submitted to the CUPA/emergency responders and updated annually.

- California Accidental Release Prevention (CalARP) Program: The CalARP Program (19 CCR §2735 et seq.) was established to prevent accidental releases of those substances determined to potentially pose the greatest risk of immediate harm to the public and environment. The CalARP Program requires businesses that store or use certain hazardous materials over threshold quantities to prepare a risk management plan, to conduct an assessment of the off-site hazard potential and implement a program to minimize the risk of a release.
- Aboveground Petroleum Storage Act (APSA) Program: The APSA Program (Cal. Health & Safety Code §25270 et seq.) regulates the management of petroleum/oils stored in ASTs. It requires that the owner/operator of aboveground petroleum/oil storage tanks with cumulative capacities over 1,320 gallons prepare a SPCC Plan, conduct inspections, and implement the plan when necessary.
- Hazardous Waste Generator, On-site Hazardous Waste Management and Treatment Permitting Programs: These programs regulate the generation, management, treatment and disposal of hazardous waste (Cal. Health & Safety Code §25100 et seq.; CCR Title 22, Division 4.5). California has more stringent requirements than those established by the U.S. EPA, therefore hazardous waste is referred to as RCRA (Federal) and non-RCRA (California) hazardous waste. The regulations contain comprehensive requirements ranging from the identification of hazardous waste (RCRA/non-RCRA), specific details on how a waste must be managed based on quantities and type, various levels of permit requirements for the treatment of hazardous waste and stringent disposal requirements.
- Underground Storage Tanks (UST) Program: This Program (16 CCR §2610 et seq.) is designed to protect public health and safety and the environment from releases of petroleum and other hazardous substances from USTs. The CUPA regulates how a UST should be closed or removed. Permits must be obtained prior to initiating removal or closure of a UST. Soil sampling to identify potential contamination from the UST may be required.

Lead Based Paint (LBP) Regulations

The LBP regulations (17 CCR §35001 et seq.) address requirements for the removal of LBP during demolition of existing structures. An Abatement of Lead Hazards Notification must be submitted to the California Department of Public Health (CDPH). The removal of all LBP materials must be conducted by a Certified Lead Supervisor or Certified Lead Works, as defined by the LBP Regulations and in accordance with the procedures specified in the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (U.S. Department of Housing and Urban Development, June 1995). The removal must be in a manner which does not result in contamination of non-work areas with lead-contaminated

dust, lead-contaminated soil, or lead-based paint debris, and in accordance with an abatement plan prepared by a certified lead supervisor, certified lead project monitor, or certified lead project designer.

California Fire Code: (CFC)

The California Fire Code also requires that a business that handles hazardous materials prepare a Business Plan as well as other regulations regarding fire safety.

Solid Waste Management

The California Department of Resources Recycling and Recovery (CalRecycle) is responsible for protecting the public's health and safety and the environment through management of the solid waste generated in California. Solid waste regulations are generally enforced through local agencies. CalRecycle works in partnership with local government, industry, and the public to reduce waste disposal and ensure environmentally safe landfills. Solid waste management provisions are outlined in the Public Resources Code, Division 30 (Cal. Pub. Resources Code §40000 et seq.)

3.8.3.3 Local**Certified Unified Program Agency**

As previously described above under State regulations, the Unified Program is implemented at the local level by a local agency – the CUPA. The CUPA is responsible for consolidating the administration of the program elements within its jurisdiction. The Fresno County Environmental Health Division is the designated CUPA in Fresno County.

San Joaquin Valley APCD Rule 4002 on Asbestos Demolition and Renovation Compliance

The SJVAPCD requires compliance with the National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulation, 40 CFR, Part 61, Subpart M, which regulates activities associated with the management of Asbestos Containing Materials (ACM). The regulation requires notification, inspection and emission control as they relate to the demolition of structures that have ACM.

Fresno County General Plan

The Safety Element of the Fresno County General Plan contains goals and policies regarding both hazardous materials as well as fire protection, and development practices within an identified high-risk fire hazard area. The policies are intended to protect persons and structures from fires and ensure that development minimizes the risk of creating fire hazards and provides means for defending against those hazards.

Goal HS-F: To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous waste.

Policy HS-F.1: The County shall require that facilities that handle hazardous materials or hazardous waste be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.

Policy HS-F.2: The County shall require that applications for discretionary development projects that will use hazardous materials or generate hazardous waste in large quantities include detailed information concerning hazardous waste reduction, recycling, and storage.

Policy HS-F.7: The County shall ensure that the mining and processing of minerals in the county is conducted in compliance with applicable environmental protection policies.

Goal HS-B: To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.

Policy HS-B.1: The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.

Policy HS-B.6: The County shall work with local fire protection agencies, the California Department of Forestry and Fire Protection and the U.S. Forest Service to promote the maintenance of existing fuel breaks and emergency access routes for effective fire suppression and in managing wildland fire hazards.

Policy HS-B.8: The County shall refer development proposal in the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety standards. If dual responsibility exists, both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall apply.

Policy HS-B.11: The County shall require new development to have water systems that meet County fire flow requirements. Where minimum fire flow is not available to meet County standards, alternative fire protection measures, including sprinkler systems, shall be identified and may be incorporated into development if approved by the appropriate fire protection agency.

3.8.4 Significance Thresholds

3.8.4.1 Appendix G Thresholds from the State CEQA Guidelines

According to Appendix G of the State CEQA Guidelines, the Project would have a significant effect if it would:

- a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;*
- b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;*

- c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school;*
- d) *Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or environment;*
- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard for people residing or working in the project area;*
- f) *For a project within the vicinity of a private airstrip, would result in a safety hazard for people residing or working in the project area;*
- g) *Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan;*
- h) *Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.*

3.8.4.2 Additional Thresholds of Significance

Requirements identified in the County policies and plans are addressed by the significance criteria above. There are no additional thresholds of significance related to the topical environmental issue.

3.8.5 Methodology of Analysis

This analysis is based on the review of applicable Federal, State and local requirements, Project design features, BMPs, operating practices and other environmental protection measures that have been incorporated into the Project to minimize potential impacts on the environment, review of the environmental evaluation of similar projects in the area and comments received during the scoping process.

Scoping letters that contained specific concerns regarding hazards and hazardous materials included, but were not limited to the following letters:

- Letter from the County Environmental Health Division, September 16, 2013;
- Letter from Mark Amorino, Consolidated Mosquito Abatement District, September 11, 2013.

A copy of the Scoping Report which includes all the comment letters is provided in Appendix A.

The hazardous materials that would most likely be used at the Project site were identified, and the associated rules and regulations were reviewed to evaluate if the Project posed a potentially significant impact associated with the management of hazardous materials. All relevant BMPs and design features that are incorporated into the Project to minimize potential environmental impacts associated with the management of hazardous materials and waste were evaluated. These are discussed in Section 2.0 (Project Description) and summarized below.

The location of the Project was also evaluated in relation to potential fire hazards, risks to airports and schools. The GeoTracker Groundwater Ambient Assessment and Monitoring (GAMA) and EnviroStar databases were reviewed to determine whether the Project site is a listed hazardous material/waste site or located near a known contaminated site. Table 3.8-1 identifies the information available from these databases.

Table 3.8-1. Hazardous Materials Databases Reviewed

Database	Agency	Results
GeoTracker Groundwater Ambient Assessment and Monitoring (GAMA)	State Water Resources Control Board	Project site not located on this database
EnviroStor: Federal Superfund Sites National Priority List State Responses Stats Superfund Military Facilities Voluntary Cleanup School Sites Site Evaluations Tiered Permits Corrective Actions	Department of Toxic Substances Control	Project site not located on any database

Source: RGP Planning and Development Services, November 2013.

For purposes of this hazardous materials analysis, a material is considered hazardous if it has characteristics defined as “hazardous” by the California Code of Regulations or appears on a list of hazardous materials prepared by a Federal, State, or local agency. The CCR defines hazardous material by reference to Section 25501 of the Health and Safety Code, which provides:

“Hazardous material means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. ‘Hazardous materials’ include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the unified program agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.” (Cal. Health & Safety Code §25501(m); 22 CCR §66260.10).

A substance may be considered hazardous due to a number of criteria, including toxicity, flammability, corrosivity, or reactivity. Once a hazardous material is ready for disposal, it is considered “hazardous waste.” Hazardous waste is any hazardous material that is abandoned, discarded, or recycled. The same criteria, as stated above, that renders a material hazardous also renders a waste hazardous.

Based on the review of the Project’s Surface Mining and Reclamation Plan, and knowledge of materials typically found at similar mining and agricultural projects, it is anticipated that the following potentially hazardous materials may be present on the Project site:

- Vehicle and equipment maintenance supplies and waste (i.e., motor oils, transmission fluids, brake fluids, hydraulic fluids, lubricating grease, oils, cleaning solvents),
- Fuel (diesel, gasoline),
- Paints and painting supplies (i.e., oil based and latex paints, spray paints, paint thinners),
- Mastic coatings,
- Pressurized gases,
- Antifreeze,
- Propane,
- Brazing and solder compounds,
- Asbestos containing materials and lead-based paint waste generated from building demolition, and/or
- Asphaltic and cementitious materials.

Diesel, gasoline and asphaltic oil would be stored in ASTs with appropriate secondary containment at or near the maintenance shop.. Other oil products that are stored in containers of 55 gallon or greater would be stored in appropriate secondary containment. Aggregates (rock, sand and gravel) produced by the aggregate processing plant would be stockpiled in accordance with the established BMPs. Cement for use in producing ready-mix concrete would be imported and stored in cement silos at the RMC plant, and asphaltic oil for use by the HMA plant to produce asphalt would be imported and stored in silos or tanks which comply with applicable containment requirements. The mining operations would not involve explosives; therefore no explosives would be stored on site. All hazardous materials tanks and containers would be maintained and inspected in accordance with the DTSC hazardous waste generator regulations as well as other applicable regulations associated with water quality, air quality and agricultural activities. Hazardous waste would be stored in a designated 90-day storage area and/or satellite accumulation areas. Appropriate spill and emergency response equipment would be located or made available in the case of an accidental spill. No hazardous waste would be disposed of on-site. Hazardous waste would be transported off-site in DOT approved containers to a permitted hazardous waste treatment, recycling or disposal facility.

There are several farmhouses and outbuilding on the Project site. Because these structures were built prior to 1980, ACM or LPB may be present. ACM is regulated as a NESHAP under SJVAPCD rules and regulations. LBP can be a hazardous waste and must be managed accordingly. If these materials are present in the structures to be removed, the demolition of the structures could result in the release of hazardous materials. The structures would not be removed until the mining phase that involves that particular area is reached. Prior to removing the structures, ACM and LBP surveys would be conducted. The demolition activities would be conducted in accordance with appropriate regulations and the Project BMPs.

Wildland hazard and fire hazard zone maps were reviewed on the CalFire web page to determine whether the Project site was located within a high or very high fire hazard zone. The Project is not located in a high or very high fire hazard zone. (www.fire.ca.gov/fire_prevention/fhsz).

Fresno County is among the counties listed as containing serpentine and ultramafic rock (OPR, 2000) which presents a concern regarding the presence of naturally occurring asbestos (NOA). However, no serpentine or ultramafic rock has been found on the Project site and NOA is not considered a potential hazard associated with the Project.

The Project would include ultimate reclamation of the mining site to include 268 acres of agriculture. Therefore the management and use of agricultural materials that could be hazardous were evaluated for compliance with the applicable regulations.

The Project would also include approximately 318 acres of open water wildlife habitat. The ponds would be constructed with a 2:1 slope and be as deep as 100 feet. The seasonal vertical movement of water and the lateral groundwater movement would preclude the occurrence of stagnation.

Project Design Features, BMPs and Environmental Protection and Minimization Measures

As discussed above and in Section 2.3.17, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project to minimize potential impacts on the environment. The environmental protective measures that were considered during this evaluation include, but are not limited to, the following:

- Prior to commencement of Project operations the following plans and programs would be implemented: Storm Water Pollution Prevention Plan (SWPPP), Hazardous Materials Business Plan, SPCC Plan, Employee Training, Record Keeping, Preventative Maintenance and Best Management Practices.
- Equipment and vehicle parking/storage areas would be graded to control stormwater run-off to surface water or into the groundwater. Vehicles would be prevented from entering the pond areas to assure that lubricants, fluids and fuels do not enter the ponds, and safety berms would be installed around the perimeter of each mining area to prevent vehicles from inadvertently entering, and to control runoff from migrating into the ponds.

- BMPs (e.g., gravel bag or rock check dams along drainage swales, silt fencing or fiber rolls to contain drainage and sediment, lined swales, etc.) would be implemented to control stormwater run-off in accordance with the site SWPPP.
- Mobile vehicles would be maintained and repaired in a covered shop or on paved surfaces. Such areas will be designed to collect pollutants.
- Inspection and maintenance programs would be established to ensure that vehicles and equipment are operating properly and leaks are prevented to the maximum extent feasible.
- All hazardous materials and hazardous waste would be managed and disposed of in accordance with local, State and Federal regulations. Agricultural chemicals, such as pesticides and fertilizers will not be stored at the Project site. All such chemicals would be managed in accordance with applicable regulations and requirements and would be removed from the Project site after application.
- "No smoking" and other hazard warning signs would be posted throughout the facility and employees would be trained as to recognition of fire hazards and ignition sources.
- Vehicles would be fueled on concrete pads next to the fueling areas. The fueling areas would be designed to manage stormwater so that it can be inspected before discharge in accordance with local, State, and Federal regulations. Fuel would be stored in above ground storage tanks with appropriate secondary containment as required by the applicable regulations.
- Vehicle washing would take place in specific paved areas that are designed to drain to holding ponds, a concrete lined sump or holding tank and control stormwater run-off to surface or groundwater. Steam cleaning would take place on concrete or hard surface pads or in the enclosed shop. These areas would be designed to collect and retain pollutants. Such pollutants would then be disposed of in accordance with local, State and Federal regulations.
- All loading and unloading of materials would take place in designated areas that would be graded and designed to control stormwater run-off from entering the river.
- An inspection and maintenance program would be established to ensure that hazardous materials and waste handling areas, storage areas, tanks, and containers meet regulatory requirements.
- The processing site would be graded to control drainage and stormwater runoff from raw materials, products and by-products from entering the river.
- All erodible surfaces within the plant areas would be graded to control stormwater run-off to the river.
- The Project site would be graded to control sediment from the stockpiles or the excavation areas from entering the river.
- Berms would be placed between the created ponds and farmland to control agricultural surface water runoff from entering the ponds.

- Blasting would not be used for the proposed mining operations.
- Permanent water ponds would have steep slopes (2:1) and would be managed to limit internal and perimeter vegetation.
- Project personnel would be trained in surveillance and control of mosquitos.

Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

If materials from Phases 6A, 6B and 7 were to be processed at the CUP 3052 plant (Section 2.3.15.7), the relocation of a conveyor within the Project site would not create any different or additional effects on the potential hazards or hazardous material management.

3.8.6 Project-Level Impacts and Mitigation Measures

3.8.6.1 Issues Found to Have No Impact

The following CEQA thresholds were evaluated and it was determined that the Project would have no impact and these potential effects do not need to be considered further.

c) *Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school?*

The Project site is not within ¼ miles of an existing or proposed school.

d) *Would the Project be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or environment?*

There are not any listed hazardous material sites located on or in the immediate vicinity of the Project site.

f) *For a project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the project area?*

The Project site is approximately 3.4 miles west of the Reedley Municipal Airport. See also HAZ-3 discussed below.

g) *Would the Project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?*

There are no adopted emergency response or evacuation plans that would be impacted by the proposed access to the Project site. Potential impacts to emergency response activities were evaluated in Section 4.12 Transportation and Traffic and it was determined that the proposed access points and truck routes will be in compliance with standard requirements of the County.

- h) *Would the Project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?***

The Project site is not located within an area of the County designated as a wildland area that may contain substantial forest fire risks and hazards, as determined by the California Department of Forestry and Fire Protection. In addition, CalFire has determined that Fresno County does not have any very high fire hazard zones in the LRA where the Project is located.

3.8.6.2 Routine Transport, Use and Disposal of Hazardous Materials

Impact Statement

Impact HAZ-1: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? **(CEQA Guidelines Threshold Criteria (a))**

Impact Analysis

As discussed above in Section 3.8.5, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project to minimize potential impacts on the environment due to the routine transport, use, or disposal of hazardous materials including, but not limited to the following:

- Prior to commencement of Project operations the following plans and programs would be implemented: SWPPP, Hazardous Materials Business Plan, SPCC Plan, Employee Training, Record Keeping, Preventative Maintenance and Best Management Practices.
- Equipment and vehicle parking/storage areas would be graded to control stormwater run-off to surface water or into the groundwater. Vehicles would be prevented from entering the pond areas to assure that lubricants, fluids and fuels do not enter the ponds, and safety berms would be installed around the perimeter of each mining area to prevent vehicles from inadvertently entering, and to control runoff from migrating into the ponds.
- Mobile vehicles would be maintained and repaired in a covered shop or on paved surfaces. Such areas will be designed to collect pollutants.
- Inspection and maintenance programs would be established to ensure that vehicles and equipment are operating properly and leaks are prevented to the maximum extent feasible.
- All hazardous materials and hazardous waste would be managed and disposed of in accordance with local, State and Federal regulations. Agricultural chemicals, such as pesticides and fertilizers will not be stored at the Project site. All such chemicals would be managed in accordance with applicable regulations and requirements and would be removed from the Project site after application.

- "No smoking" and other hazard warning signs would be posted throughout the facility and employees would be trained as to recognition of fire hazards and ignition sources.
- Vehicles would be fueled on concrete pads next to the fueling areas. The fueling areas would be designed to manage stormwater so that it can be inspected before discharge in accordance with local, State, and Federal regulations. Fuel would be stored in above ground storage tanks with appropriate secondary containment as required by the applicable regulations.
- Vehicle washing would take place in specific paved areas that are designed to drain to holding ponds, a concrete lined sump or holding tank and control stormwater run-off to surface or groundwater. Steam cleaning would take place on concrete or hard surface pads or in the enclosed shop. These areas would be designed to collect and retain pollutants. Such pollutants would then be disposed of in accordance with local, State and Federal regulations.
- All loading and unloading of materials would take place in designated areas that would be graded and designed to control stormwater run-off from entering the river.
- An inspection and maintenance program would be established to ensure that hazardous materials and waste handling areas, storage areas, tanks, and containers meet regulatory requirements.
- The processing site would be graded to control drainage and stormwater runoff from raw materials, products and by-products from entering the river.

Diesel, gasoline and asphaltic oil would be stored in ASTs with appropriate secondary containment at or near the maintenance shop. Other oil products that are stored in containers of 55 gallon or greater would be stored in appropriate secondary containment. Therefore, a spill of these materials would be small and localized. All hazardous materials would be stored in accordance with a Hazardous Materials Business Plan, SWPPP and SPCC Plan prepared for the Project site and in accordance with hazardous material regulations. No hazardous waste would be disposed of on the Project site. All waste would be transported to a permitted/approved waste disposal facility. Therefore, the Project would not result in significant impacts related to the transport, use, or disposal of hazardous materials.

Because there was a concern regarding the creation of stagnant water which could be suitable habitat for mosquito development, this potential hazard was also evaluated. Mosquitos breed in shallow water and can carry disease such as West Nile virus. Due to the depth of excavation (100 feet) and the shallow groundwater table (15-20 feet) water in the ponds would be deep and surrounded by steep (2:1) slopes which would minimize shallow water areas. The seasonal vertical movement of water and the lateral groundwater movement would also preclude the occurrence of stagnation. In addition the following preventative practices would be implemented:

- Project personnel would be trained in surveillance and control of mosquitos.
- Mosquito fish would be placed in the ponds to reduce the size of the mosquito population through biological means.

- Mosquito abatement personnel would be provided access for surveillance and control of mosquito breeding habitat.
- Vegetation removal or thinning (except reclamation revegetation) to facilitate pesticide applications would occur as needed, to enable mosquito fish to reduce the size of the mosquito population through biological means.
- Dewatering of mosquito breeding habitat would occur to the extent possible in order to minimize the size of the problem area. (except dewatering of active excavations or reclaimed ponds).
- Borders or levees to contain seepage or stormwater would be constructed.
- Impoundments or ponds (except active excavations or reclaimed ponds) would be maintained at constant minimum depth of four feet to the extent possible to minimize the establishment of mosquito breeding habitat.

Therefore, the potential for the Project to create mosquito development habitat would be limited and this potential impact is considered less than significant.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None Required

Level of Significance After Mitigation

Not applicable

3.8.6.3 Accident Conditions Involving Release of Hazardous Materials**Impact Statement**

Impact HAZ-2: Would the Project create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials? *(CEQA Guidelines Threshold Criteria (b))*

Impact Analysis

Accidents could occur during the management of hazardous materials routinely used at the Project site. The use of these materials would be conducted in accordance with the Federal, State and local regulations in order to prevent or minimize the impact of a release. As discussed above and in Section 2.3.17, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project to minimize the potential for foreseeable upset and

accident conditions involving the release of hazardous materials including, but are not limited to, the following:

- Prior to commencement of Project operations the following plans and programs would be implemented: SWPPP, Hazardous Materials Business Plan, SPCC Plan, Employee Training, Record Keeping, Preventative Maintenance and Best Management Practices.
- Equipment and vehicle parking/storage areas would be graded to control stormwater run-off to surface water or into the groundwater. Vehicles would be prevented from entering the pond areas to assure that lubricants, fluids and fuels do not enter the ponds, and safety berms would be installed around the perimeter of each mining area to prevent vehicles from inadvertently entering, and to control runoff from migrating into the ponds.
- Mobile vehicles would be maintained and repaired in a covered shop or on paved surfaces. Such areas will be designed to collect pollutants.
- Inspection and maintenance programs would be established to check that vehicles and equipment are operating properly and leaks are prevented to the maximum extent feasible.
- All hazardous materials and hazardous waste would be managed and disposed of in accordance with local, State and Federal regulations. Agricultural chemicals, such as pesticides and fertilizers will not be stored at the Project site. All such chemicals would be managed in accordance with applicable regulations and requirements and would be removed from the Project site after application.
- "No smoking" and other hazard warning signs would be posted throughout the facility and employees would be trained as to recognition of fire hazards and ignition sources.
- Vehicles would be fueled on concrete pads next to the fueling areas. The fueling areas would be designed to manage stormwater so that it can be inspected before discharge in accordance with local, State, and Federal regulations. Fuel would be stored in above ground storage tanks with appropriate secondary containment as required by the applicable regulations.
- Vehicle washing would take place in specific paved areas that are designed to drain to holding ponds, a concrete lined sump or holding tank and control stormwater run-off to surface or groundwater. Steam cleaning would take place on concrete or hard surface pads or in the enclosed shop. These areas would be designed to collect and retain pollutants. Such pollutants would then be disposed of in accordance with local, State and Federal regulations.
- All loading and unloading of materials would take place in designated areas that would be graded and designed to control stormwater run-off from entering the river.
- An inspection and maintenance program would be established to ensure that hazardous materials and waste handling areas, storage areas, tanks, and containers meet regulatory requirements.

- The processing site would be graded to control drainage and stormwater runoff from raw materials, products and by-products from entering the river.

Diesel, gasoline and asphaltic oil would be stored in ASTs with appropriate secondary containment at or near the maintenance shop. Other oil products that are stored in containers of 55 gallon or greater would be stored with appropriate secondary containment. Therefore, a spill of these materials would be small and localized. A Hazardous Materials Business Plan provides emergency responders with the location and amount of hazardous materials managed on-site. All employees would receive the appropriate training necessary for the safe management of hazardous materials, including emergency spill response and pollution prevention. Hazardous materials would be stored with the required secondary containment, appropriately labeled and have emergency spill response equipment available.

Should a previously unknown UST be discovered while conducting operations on the Project site, the County would be contacted and applicable regulations will be followed. Abandoned USTs may have resulted in a release of hazardous materials or pose the potential of a release; therefore the County procedures for closure or removal would be followed and, if necessary, sampling conducted to identify previous contamination.

There are several buildings on-site that were constructed prior to 1980 and therefore have the potential to contain ACMs and/or LBP. Prior to demolition of the buildings, an asbestos survey would be conducted and any suspicious materials would be disposed of in accordance with agency requirements. Written notification would be provided to the SJVAPCD and to the Public Works and Planning Department or designee five business days in advance of demolition activities. The demolition contractor would determine the percent of ACMs in the volume of material to be disposed. The ACM would be taken to the appropriate landfill based on the volume of ACMs. The necessary notifications, record keeping and inspections would be conducted as required by the ACM regulations.

An LBP survey would also be conducted prior to demolition per the LBP regulations. Notification to the CDPH would be provided and removal will be performed by certified professionals. The removal would be in a manner which does not result in contamination of non-work areas with lead-contaminated dust, lead-contaminated soil, or lead-based paint debris, and in accordance with the abatement plan. The necessary notifications, record keeping and inspections would be conducted as required by the LBP regulations. A copy of the results of the clearance inspection would be provided to the County upon completion of abatement and inspection activities.

The Project would therefore not create a significant hazard through a reasonably foreseeable upset and accident involving the release of hazardous materials.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable

3.8.6.4 Hazards Associated with a Public Airport**Impact Statement**

Impact HAZ-3: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? **(CEQA Guidelines Threshold Criteria (e))**

Impact Analysis

The Project site is located approximately 3.4 miles west of the Reedley Municipal Airport and is not included in an airport land use plan. However, there could be a concern that the proposed post-mining open water wildlife habitat (water ponds) would become an attractant to birds that could result in bird aircraft strike hazards for planes landing or departing from the Reedley Municipal Airport. This concern was addressed in the Final EIR for the Carmelita Mine and Reclamation Project due to the location of that project within 10,000 feet of the airport.

The Federal Aviation Administration (FAA) Advisory Circular 150/5200-33B identifies the following minimum Separation Criteria for land-use practices that attract hazardous wildlife to the vicinity of airports:

- *For airports serving piston-powered aircraft hazardous wildlife attractants must be 5,000 feet from the nearest air operations area (AOA).*

This Project is approximately 3.4 miles away from the Reedley airport therefore it meets the minimum separation criteria of 5,000 feet from the AOA.

- *For Airports serving turbine-powered aircraft, hazardous wildlife attractants must be 10,000 feet from the nearest AOA.*

This Project is approximately 3.4 miles away from the Reedley airport therefore it meets the minimum separation criteria of 10,000 feet from the AOA.

- *For all airports, the FAA recommends a distance of 5 statute miles between the farthest edge of the airport's AOA and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace.*

The Project is 3.4 miles from the Reedley Airport so it is within 5 miles of an airport. However, it is not within the airport's approach or departure airspace since the Project is located 3.4 miles to the west of the airport and the airport's approach or departure airspace is to the north and south and to the east. Existing water features in the vicinity of the airport, which have attracted waterfowl and other flocking birds for many years, include the Kings River, Byrd Slough, the Cameron Slough drainage and the ponds at the Vulcan Materials Sanger-Centerville aggregate site and the Sante Fe Aggregates site. Despite the presence of these nearby wildlife attractants there have been no reported bird strikes at Reedley airport.

Since the Project is 3.4 miles to the west of the airport's approach or departure airspace, there are multiple, existing water features in the vicinity of the airport that will continue to attract wildlife, and there have been no reported bird strikes at Reedley airport, the Project's reclaimed ponds should not be an attractant that would cause wildlife movements into or across the approach or departure airspace.

Therefore, the potential for the Project to be a hazardous wildlife attractant is considered low and less than significant.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable

3.8.7 Cumulative-Level Impacts and Mitigation Measures

The geological context for cumulative impacts for hazards and hazardous materials include the cities of Reedley and Sanger, and the unincorporated County surrounding the Project site.

As discussed in Section 3.8.6.1, CEQA Guidelines Thresholds c), d), f), g) and h) were determined to have no impact and therefore further evaluation is not considered necessary. The potential cumulative impacts associated with CEQA Thresholds a) and b) are discussed below.

Would the Project, when considered in conjunction with other cumulative projects, create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (CEQA Guidelines Threshold Criteria (a))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been

evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. They will be required to comply with numerous local, State and Federal regulations relating to the routine transport, use and disposal of hazardous materials. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. It is also assumed that, if they are approved, these projects will comply with hazardous materials regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Project would not involve large quantities of hazardous materials, it has incorporated numerous environmental protection measures and design features to minimize potential impacts associated with the transport, use or disposal of hazardous materials, and it will comply with all applicable regulatory requirements. The Project would not result in significant impacts related to these effects. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with the transport, use or disposal of hazardous materials would be less than significant.

As discussed in Section 3.8.6.2 preventative practices would be implemented to control mosquitos. Therefore, the potential for the Project to create mosquito development habitat would be limited and this potential impact is considered less than significant. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with the control of mosquitos would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials? (CEQA Guidelines Threshold Criteria (b))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. They will be required to comply with numerous local, State and Federal regulations relating to the safe management of hazardous materials, pollution prevention, and spill and emergency response and preparedness. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. It is also assumed that, if they are approved, these projects will comply with hazardous materials regulations and be considered consistent with the County

General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Project would not involve large quantities of hazardous materials, and employee training would be conducted on the safe management of hazardous material and spill/emergency response requirements. The Project has incorporated numerous environmental protection measures and design features to minimize potential spills, upsets, or accidents associated with hazardous materials, and it will comply with all applicable regulatory requirements. The Project would not result in significant impacts related to these effects. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with these effects would be less than significant.

For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project, when considered in conjunction with other cumulative projects, result in a safety hazard for people residing or working in the project area? (CEQA Guidelines Threshold Criteria (e))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. Carmelita is the closest project to an airport, located within 5,000 feet of the Reedley Municipal airport, and there was a concern that there could be an increased risk of bird aircraft strikes. It was concluded that the Carmelita project would not have a significant impact associated with BASH. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. It is also assumed that, if they are approved, these projects will comply with all regulations regarding airport safety, and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Project is approximately 3 miles away from the Reedley airport, is not included in an airport use plan, and would not increase the risk of bird aircraft strikes. The Project would not result in significant impacts related to these effects. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with these effects would be less than significant.

3.8.8 Alternatives to Significant Effects

No Project Alternative

The No Project Alternative would avoid all Project-related impacts to known hazards and hazardous materials. However, hazardous materials associated with the current agricultural activities would continue to be used. Since the Project BMPs and project design features already reduce impacts associated with these activities to less than significant, this alternative would not significantly reduce potential impacts.

Reduced Annual Production Alternative

This alternative would evaluate the potential impacts from artificially limiting the proposed production by a given amount. This alternative would not result in any change to the use and management of hazardous materials; therefore, it would not reduce potential impacts associated with the Project.

Reduced Project Size Alternative

This alternative would evaluate the potential impacts from artificially reducing the Project footprint by some stated amount. This alternative would not result in any change to the use and management of hazardous materials; therefore it would not reduce potential impacts associated with the Project.

Reduced Mining Depth Alternative

This alternative would evaluate the potential impacts from artificially reducing the mining depth by some stated amount. This alternative would not result in any change to the use and management of hazardous materials; therefore, it would not reduce potential impacts associated with the Project.

Different Phasing Alternative

This alternative would evaluate the potential impacts from revising the phasing plan. This alternative would not result in any change to the use and management of hazardous materials; therefore, it would not reduce potential impacts associated with the Project.

3.9 HYDROLOGY AND WATER QUALITY

3.9.1 Introduction

This section addresses potential impacts on hydrology and water quality associated with the Project. It includes a discussion of the general site surface-water and groundwater conditions. As part of the assessment presented in this section, anticipated changes to the baseline conditions as a result of the Project were evaluated.

The primary sources used in this analysis were the *Riverbend Sand and Gravel Surface Runoff and Drainage Plan* (Chang Consultants, 2013), *Groundwater Conditions at the Riverbend Sand and Gravel Project* (Kenneth D. Schmidt (KDSA), 2013), *Letter Addendum to Groundwater Conditions at the Riverbend Sand and Gravel Project* (KDSA, May 2014), *Water Supply Assessment for the Riverbend Sand and Gravel Project* (KDSA, 2012), Hydrology Memorandum (SLR, 2013) and *Riverbend Sand and Gravel Hydraulic Flood Analysis* (Chang Consultants, 2014). Copies of these documents are included in Appendix I.

3.9.2 Environmental Setting

3.9.2.1 Regional Setting

The Project is located in the San Joaquin Valley, which consists of the southern portion of the Central Valley of California. The Central Valley was formed by millions of years of deposition of Quaternary sediments derived from the uplifted Sierra Nevada and Coast Ranges, which bound the Central Valley on its east and west. The Central Valley is an alluvial plain approximately 50 miles wide and 400 miles long (north-south). Sediments have been deposited into the Central Valley for the last 160 million years, and can be thousands of feet thick in certain areas.

Numerous rivers and streams originating in the higher elevations of the Sierra Nevada flow into the Central Valley, depositing alluvial sediments. This alluvium is underlain by a sequence of marine and continental sedimentary rocks consisting of shale, siltstone, and sandstone. Beneath these rocks lie an impermeable basement complex of igneous and metamorphic rocks that extend as deep as 13,000 feet bgs. These basement rocks are a subsurface extension of the same rocks that occur in the Sierra Nevada.

3.9.2.2 Vicinity Setting

The environmental setting of the vicinity is essentially the same as the Project site and is discussed below in Section 3.9.2.3.

3.9.2.3 Project Site Setting

Geology

The Project site is located adjacent to the Kings River on a relatively thick sequence of alluvial fan sediments previously deposited by the Kings River (Figure 3.9-1). The Kings River is geomorphically similar to the San Joaquin River located approximately 20 miles northwest of the site, except that the Kings River has a broader floodplain and a thicker section of recent sand and gravel.

In 2010 and 2011, 14 exploratory borings were drilled at the Project site. Based on these investigations, it was determined that relatively coarse-grained deposits of the ancestral Kings River are generally predominant in the subsurface above a depth of about 200 to 220 feet. These deposits are primarily sand, gravel, and cobbles, and have been termed the Quaternary Older Alluvium. Some interlayered clay and silt layers are also present, but these are generally thin and discontinuous. Clay is also intermixed with the coarse-grained deposits in some depth intervals. Bedrock was not encountered. Based on information from Sanger, Reedley, and the Great Western School, where deeper borings and supply wells have been drilled, the top of the bedrock in the vicinity of the site is below a depth of 700 feet (KDSA, 2013).

Climate

Climate data associated with nearby Fresno Airport is provided in Table 3.9-1 (Western Regional Climate Center, 2013). The climate in the San Joaquin Valley and at the Project site is generally characterized as Mediterranean, with hot dry summers and cool damp winters. The Project site is considered semi-arid due to relatively scarce precipitation. Most precipitation occurs as rainfall between late fall and early spring months.

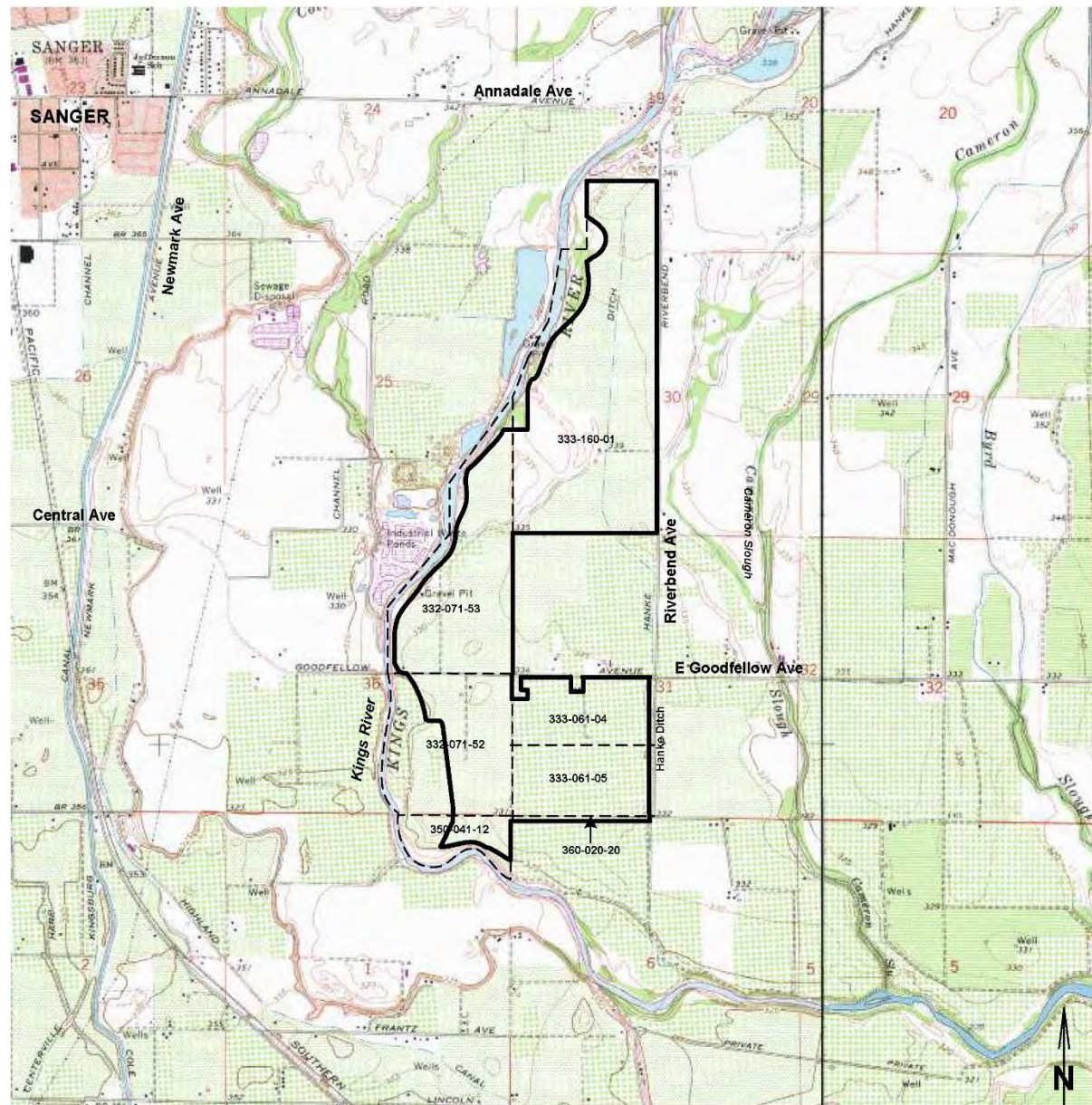
Table 3.9-1 Site Vicinity Climate Data

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Average Max. Temperature (F)	54.6	61.5	67	74.4	83.5	91.7	98.3	96.4	90.8	79.7	65.3	54.7	76.5
Average Min. Temperature (F)	37.6	40.7	43.8	48	54.3	60.5	65.7	64	59.7	51.2	42.4	37.3	50.4
Average Total Precipitation (in.)	2.09	1.9	1.89	1.03	0.36	0.16	0.01	0.01	0.15	0.53	1.13	1.64	10.89
Average Total Snowfall (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: WRCC (2013) for Fresno Airport from 7/1/1948 to 3/31/2013.

Surface Water Hydrology

The primary surface water body in the Project site vicinity is the Kings River (Figure 3.9-1), which is the western boundary of the Project site. The Kings River flows southeastward from its headwaters in the mountains of the Sierra Nevada. At the southern end of the Project site, the Kings River turns toward the east, and then turns again towards the south, eventually terminating at Tulare Lake. No other natural surface water bodies occur at the Project site.

Legend:

- Parcel Lines
- Project Boundary
- 350-041-12 Assessors Parcel No.

Source: Buada Associates, 2013

Figure 3.9-1 Site Vicinity Map

The Pine Flat Dam, located approximately 14 miles northeast (upstream) of the Project site, controls Kings River flood flows originating above the reservoir, protects downstream areas from flooding, and provides water for irrigation. The one million acre-foot (AF) Pine Flat Reservoir covers 6,000 acres when full.

Surface water flows are the highest during flood releases from the dam. Otherwise large flows generally occur as the irrigation season. Annual Kings River runoff averages 1,745,000 AF (Kings River Conservation District, 2009). Lower flow rates occur in the relatively dry months after the irrigation season.

The Project site is within the jurisdiction of the Kings River Water District (KRWD), which is one of 28 districts comprised by the Kings River Water Association. The KRWD administers surface water deliveries to the Project site and areas northeast, east and southeast of Sanger.

Hanke Ditch is a manmade irrigation feature that flows parallel to the Kings River. Part of the ditch is in an underground pipe that runs through the eastern portion of the Project site north of Goodfellow Avenue (Figure 3.9-1). It is an open ditch along the eastern boundary of the Project site south of Goodfellow Avenue, and flows into the Kings River approximately one-half mile southeast of the Project site.

FEMA mapped the 100-year floodway and regulatory floodplain for the Project area in the late 1970s. The FEMA's Flood Insurance Rate Maps (FIRMs) covering the Project site are Map Numbers 06019C2160H and 06019C2170H. The "regulatory" floodway is the area within the floodplain that must be reserved in order to convey the 100-year flow without cumulatively increasing the 100-year water surface elevation by more than a foot. In addition, in 1971 the State of California, through the Central Valley Flood Protection Board (CVFPB), delineated the "designated" floodway for the Project area and vicinity.

Since the floodplain and floodway delineations by FEMA and CVFPB were performed in the 1970s, it is likely that some of the physical changes that have occurred along the natural river corridor since then may have altered the floodplain. Therefore an updated Hydraulic Flood Analysis (Chang, January 2014) was conducted using recent topographic mapping for the Project site and is provided in Appendix I. The results of the updated existing condition analysis indicates that the current floodplain on the Project site is significantly different than the mapped FEMA FIRM floodplain in several areas. Therefore, the updated existing conditions analysis serves as the appropriate baseline for the Project site. The Project site is set back a minimum of 50 feet from regulated and designated floodways, and the only Project area that would block the floodplain fringe is the plant site. All other Project areas would either maintain or lower the ground within the floodplain fringe.

Groundwater Conditions

The Project site is located in the Kings Groundwater Subbasin (Subbasin) of the San Joaquin Valley Groundwater Basin. The principal aquifer in the Project site vicinity consists of the coarse-grained alluvial sediments (i.e. sands and gravels) located near the surface (Page and LeBlanc, 1969).

The alluvial deposits in the Project site vicinity are highly productive. Yield of many irrigation wells in the area range from about 500 to 2,000 gallons per minute (gpm) (KDSA, 2013). The alluvial aquifer near the Project site is mostly unconfined and regional groundwater flow is generally toward the southwest, although pumping depressions in certain areas have caused altered flow patterns (Page and LeBlanc, 1969). Based on water level measurements for monitor wells installed at the Project site, groundwater in the Project site vicinity flows toward the south, parallel with the Kings River. As of June 2012, depth to water in the on-site wells ranged between approximately 15 and 20 feet bgs (KDSA, 2013).

The Subbasin has been in overdraft for many years (Kings Basin Water Authority, 2013), which means that groundwater levels have been in a state of decline. However, at or near the Project site, water level declines have been small. Overdraft conditions are caused by pumping groundwater at greater rates than it is replenished. The average annual overdraft in the Subbasin between 1963 and 2009 was about 120,000 AF (*The Kings River Handbook*. Handbook, Kings River Conservation District, KRCD & Kings River Water Association, Fresno, CA., 2010). The Subbasin contains about 93 million AF of storage to a depth of about 1,000 ft bgs (US Geological Survey, 2003).

The main sources of recharge to groundwater in the Project site vicinity are deep percolation from irrigation return flow, seepage from the Hanke Ditch, Kings River, and nearby Cameron Slough, and groundwater inflow from the north. The main sources of groundwater discharge are pumping for uses such as irrigation, and groundwater discharge to the Kings River during moderate river stages.

A total of five groundwater monitor wells were installed at the Project site in 2010 and 2011 (Figure 3.9-2). All of these wells were constructed by the casing hammer method, are 70 feet deep, and have 6 inch diameter casings perforated from 20 to 55 feet bgs. There are also 4 domestic wells and 4 active irrigation wells on the Project site (KDSA, 2013).

In addition, there are five monitor wells at the CMI Kings River Sand and Gravel facility, which is located adjacent southeast of the Project site. The westernmost of the CMI monitor wells (CMI MW-4) is just east of the Project site.

Water-level records for the CMI monitor wells, east of the Project site, are available since 1997, which is a longer period of record than is available for the Project site. Depth to water in four of the CMI wells has normally ranged from about 7 to 15 feet, and depth to water in CMI MW-4 has normally ranged from about 16 to 20 feet. Water-level elevation maps for the CMI site have consistently shown a southerly direction of groundwater flow toward the Kings River. The water surface level in the river usually varies seasonally by about five feet.

Water levels in on-site wells and CMI MW-4 were measured on June 6, 2012 (Table 3.9-2). The direction of groundwater flow on that date was toward the south-southwest (Figure 3.9-3). Figure 3.9-4 shows water level hydrographs for these monitor wells. The deepest water levels have normally been in the winter, when flows in the Kings River and Hanke Ditch are low or non-existent, respectively. The shallowest water levels have occurred at well MW-3, which is near the Kings River and the southwest corner of the Project site. The deepest levels have been in MW-2 and CMI MW-4 (KDSA, 2013).

Table 3.9-2. Water Level Data for June 6, 2012

Well	Measuring Point Elevation (feet above MSL)	Depth to Water (feet)	Water-Level Elevation (feet above MSL)
MW-1	336.56	14.00	322.56
MW-2	337.88	18.60	319.28
MW-3	324.91	12.00	312.91
MW-4	348.06	15.15	332.91
MW-5	337.18	13.45	323.73
CMI MW-4	333.94	20.05	313.89

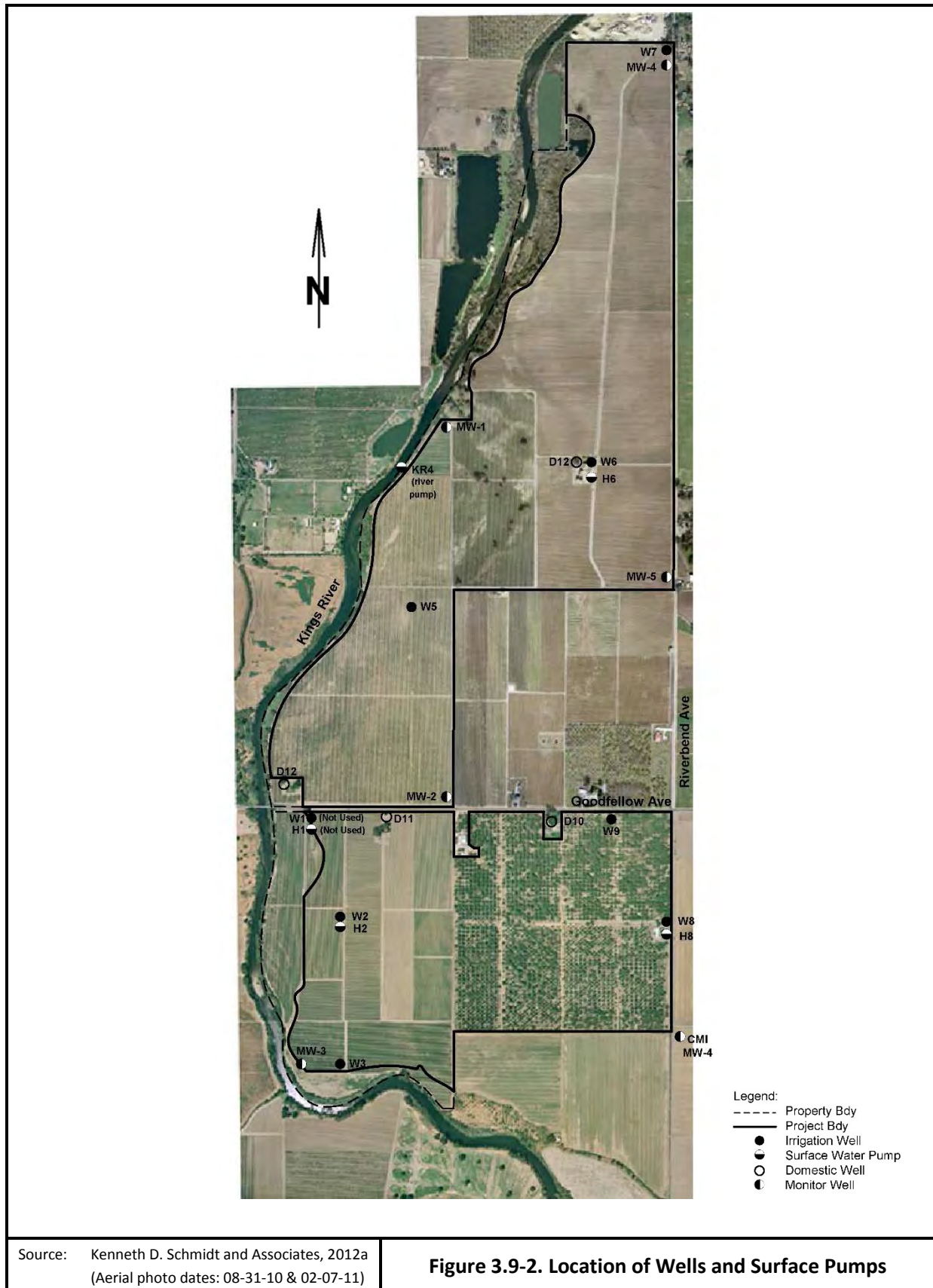
Water Consumption

The Project site is located in an agricultural area where both surface water and groundwater are extensively used for irrigation purposes. Approximately 95% of the irrigation water used at the Project site comes from the Hanke Ditch. Figure 3.9-2 shows the locations of three pumps from the Hanke Ditch, and one pump used to divert water to the Project site from the Kings River. Water delivered by the Kings River pump is used to irrigate five acres of the Project site. The eight on-site irrigation wells and the Kings River pump are also used (rarely) to supplement the Hanke Ditch water supply as needed.

Currently, the only consumptive use of water at the Project site is for irrigation of crops. The KRWD has delivered an average of 3.5 to 4.0 acre-feet per acre per year of water to the Project site. For the currently irrigated land at the Project site (619 acres), this totals about 2,320 AF/yr on average. An estimated 30% of this delivery is believed to be unused by crops and instead would percolate the aquifer, so the consumptive use is approximately 1,630 AF/yr (KDSA, 2013).

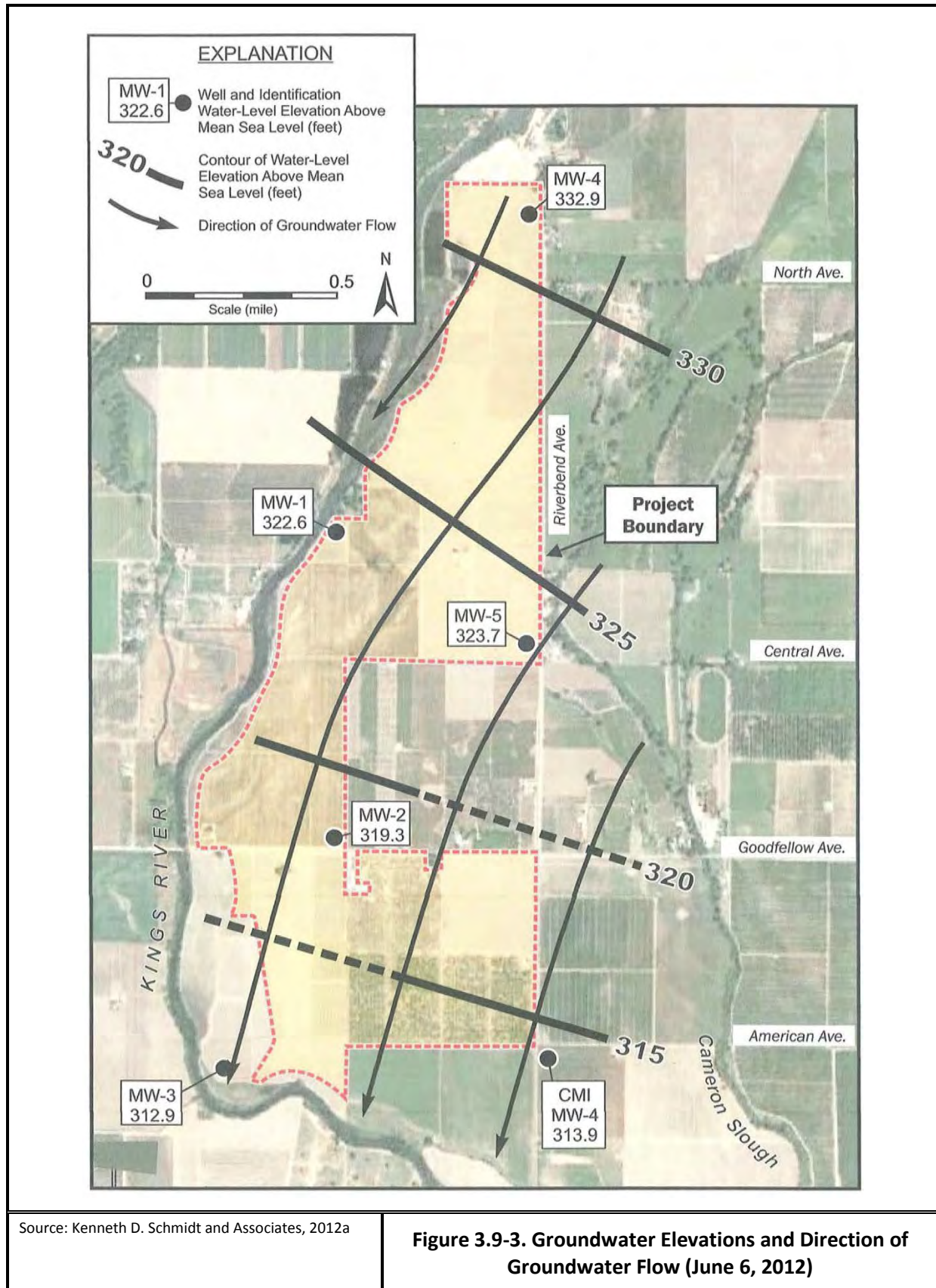
Groundwater Quality

Shallow groundwater underneath certain portions of Fresno County is affected by contaminants such as nitrates, pesticides, and organic compounds. Elevated nitrate concentrations can be caused by use of fertilizers for agricultures. Several pesticides have been found in shallow groundwater due to previous usage of pesticides in irrigated areas which have reached the shallow groundwater. Laboratory analyses for these and other potential contaminants were conducted on samples collected from the Project site (Table 3.9-3).



Source: Kenneth D. Schmidt and Associates, 2012a
(Aerial photo dates: 08-31-10 & 02-07-11)

Figure 3.9-2. Location of Wells and Surface Pumps



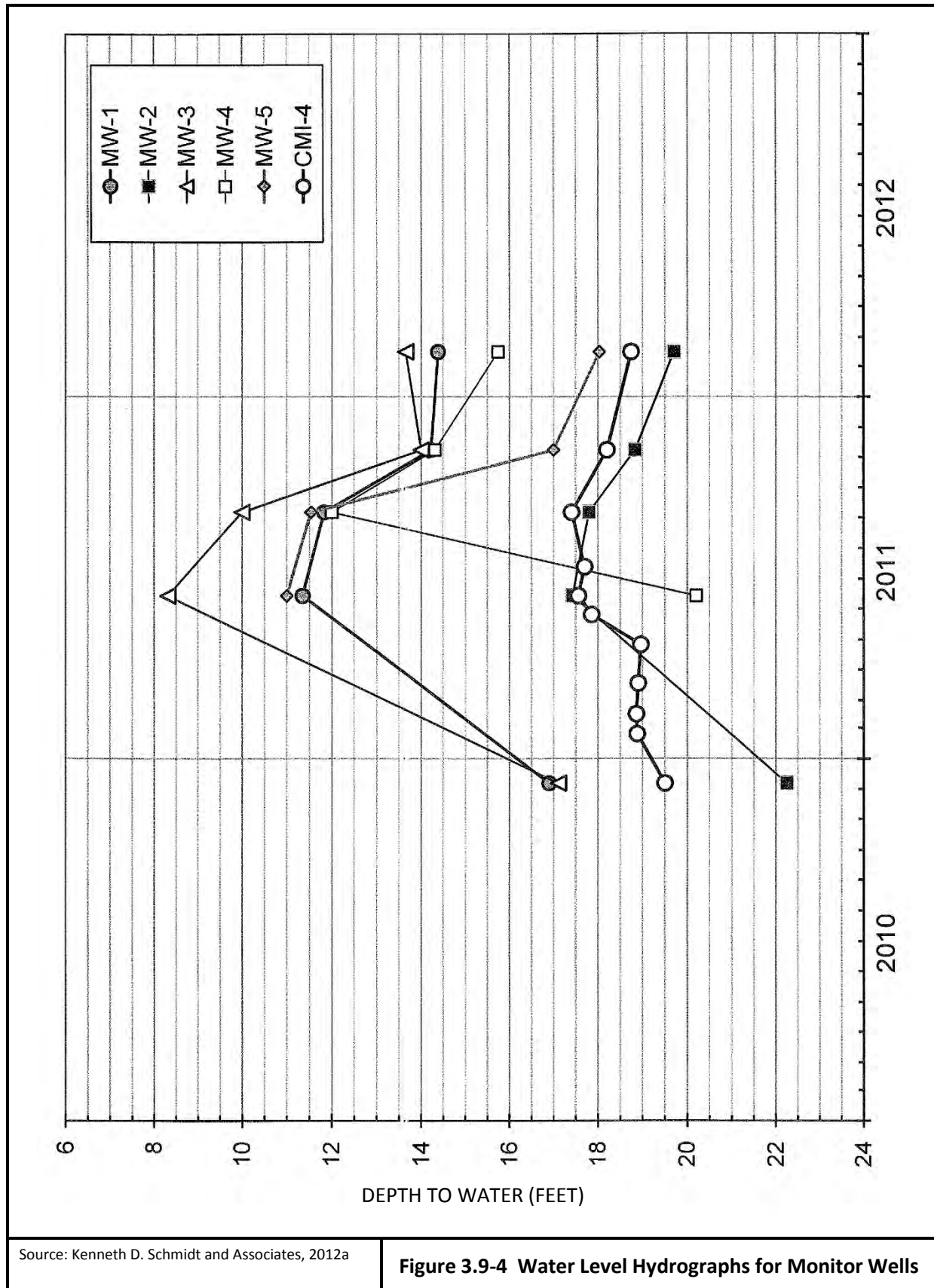


Table 3.9-3. Results of Chemical Analyses of Water from Monitor Wells (June 6, 2012)

Constituent (mg/l)	MW-1	MW-2	MW-3	MW-4	MW-5	CMI MW-4	MCL
Calcium	31	65	63	58	12	43	
Magnesium	9	20	19	18	3	14	
Sodium	11	74	49	30	4	43	
Potassium	2	2	3	3	1	1	
Carbonate	< 10	< 10	< 10	< 10	<10	<10	
Bicarbonate	120	260	200	260	60	200	
Sulfate	7	127	119	35	4	14	250
Chloride	6	10	15	6	3	3	250
Nitrate	4	29	< 0.4	2	1	70	45
pH	7.5	6.5	7.1	7.0	7.2	7.2	
Electrical Conductivity (micro-ohms @ 25 C)	266	745	630	513	107	497	
Total Dissolved Solids (@ 180 C)	150	490	400	280	60	300	500
Iron	< 0.05	< 0.05	0.93	0.62	0.24	<0.05	0.3
Manganese	< 0.01	0.01	0.64	0.27	0.89	0.01	0.05
Arsenic	< 0.002	< 0.002	< 0.002	< 0.002	<0.002	<0.002	0.01
Alpha Activity (pc/1)	0.4	60.9	12.4	16.2	0.6	62.6	15
DBCP (ppb)	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	<0.01	0.2
EDB (ppb)	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	<0.01	0.05
1,2,3 TCP (ppb)	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	<0.01	

Source: KDSA, 2013.

Notes: Inorganic and alpha activity analyses by FGL Environmental of Santa Paula. Trace organic analyses by APPL, Inc. of Clovis. The analysis for water from MW-2 is for the June 14, 2011.

Concentrations of all constituents analyzed were within California maximum contaminant levels except for manganese and alpha activity. Manganese concentrations in water from the wells ranged from less than 0.01 to 0.89 mg/l. Manganese concentrations in water from MW-3, MW-4, and MW-5 ranged from 0.27 to 0.89 mg/l, exceeding the recommended MCL of 0.05 mg/l. Alpha activities in water from MW-2, MW-4, and CMI MW-4 ranged from 16.2 to 62.6 picocuries per liter, exceeding the recommended MCL of 15 mg/l. The elevated alpha activities are associated with uranium concentrations and are likely due to natural factors. Concentrations of EDB, DBCP, and 1,2,3-TCP were non-detect in all of the samples. These three constituents are associated with historical pesticide use in the area. Their absence in the shallow groundwater indicates that they were not applied to the Project site. Based on these results, the quality of the shallow groundwater is considered suitable for irrigation and industrial use.

3.9.3 Regulatory Setting

3.9.3.1 Federal

Federal Water Pollution Control Act

The Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), commonly known as the Federal Clean Water Act (CWA), established the basic structure for regulating discharges of pollutants into the water of the United States. This gave U.S. EPA the authority to implement pollution control programs such as setting water quality standards and criteria for contaminants in surface waters. The CWA does not deal directly with groundwater or with water quantity issues. Section 208 requires the use of BMPs to control releases of pollutants in stormwater at construction sites. Section 303(d) requires that states identify waters for which effluent limits are not stringent enough to implement the applicable water quality standards, and to prepare plans for improving the quality of these water bodies. Section 401 requires the Federal government to obtain certification from the state that a project is consistent with state water quality standards. Section 402(p)(3)(B)(iii) authorizes the National Pollutant Discharge Elimination System (NPDES) permit program to control water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or manmade ditches. Section 404 authorizes the United States Army Corps of Engineers (USACE) to regulate projects that would discharge dredge or fill materials into Waters of the U.S.

Construction projects and many industrial facilities must obtain NPDES permits to control the release of industrial chemicals in stormwater runoff. Stormwater discharges are generated by runoff from land and impervious areas such as paved streets, parking lots, and building rooftops that during rainfall events often contain pollutants in quantities that could adversely affect water quality. The primary method to control stormwater discharges is through the use of BMPs.

Federal Safe Drinking Water Act of 1974

First enacted in 1974 and substantively amended in 1986 and 1996, the Federal Safe Drinking Water Act (42 U.S.C. §300f et seq.) authorizes the U.S. EPA to set national health-based standards for drinking water to protect against both naturally occurring and manmade contaminants that may be found in drinking water.

3.9.3.2 State

Regional Water Quality Control Board (RWQCB)

The regulations set by the RWQCB pertain to water quality aspects of discharges of solid waste to land for treatment, storage, or disposal. Title 27 of the California Code of Regulations, contains provisions governing the discharge of mining waste. (27 CCR §22470 et seq.) The standards set by the RWQCB do not override or relieve an owner of compliance with other orders, laws, regulations, or other requirements of other approval, regulatory, or enforcement agencies, such as the California DTSC, local health entities, water and air quality control boards, local land use authorities, fire authorities, and other agencies.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Cal. Water Code §13000 et seq. was enacted to establish a regulatory program to protect water quality and beneficial uses of all waters of the State of California. It created the State Water Resources Control Board (SWRCB) and RWQCB to plan, implement, manage and enforce water quality protection and management. The RWQCB is empowered by the Porter-Cologne Water Quality Control Act to require compliance with State and local water quality standards. The Porter-Cologne Act contains a complete framework for the regulation of waste discharges to both surface waters and groundwaters of the state, through the issuance of Waste Discharge Requirements (WDRs) by the RWQCBs.

The Project site is located within the Central Valley RWQCB geographic area. The NPDES Permitting program is administered by the SWRCB. To obtain a NPDES permit, applicants must prepare and submit a Notice of Intent (NOI) with the SWRCB, develop a SWPPP and monitoring program, and implement appropriate BMPs.

Senate Bill 610: Water Supply Assessment

Water Code §§10910-10915 were amended by Senate Bill 610 (SB 610), effective January 1, 2002. SB 610 requires an assessment of available water supplies to determine if they are sufficient to serve the demand generated by the project, as well as the reasonably foreseeable demand in the region over the next 20 years under average normal year, single dry year, and multiple dry year conditions.

3.9.3.3 Local

Fresno County General Plan (2000)

The Fresno County General Plan includes goals and policies directed toward protecting and maintaining water supply and water quality within the County. Select goals and policies relevant to this analysis are listed below.

Water Supply

Policy PF-C.3: To reduce demand on the County's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.

Policy PF-C.11: The County shall assure an on-going water supply to help sustain agriculture and accommodate future growth by allocation of resources necessary to carry out the water resource management programs.

Policy PF-C.17: The County shall, prior to any construction of any discretionary project related to land use, undertake a water supply evaluation.

Policy PF-C.25: The County shall require that all new development within the County use water conservation technologies, methods, and practices as established by the County.

Policy PF-C.26: The County shall encourage the use of reclaimed water where economically, environmentally, and technically feasible.

Wastewater Treatment and Discharge

Policy PF-D.6: The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that permit installation of such disposal facilities without threatening surface or groundwater quality or posing any other health hazards and where community sewer service is not available and cannot be provided.

Storm Water Runoff

Policy PF-E.16: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

Policy PF-E.20: The County shall require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in floodwaters, flowing rivers, streams, creeks, or reservoir waters.

Policy PF-E.21: The County shall require the use of feasible and practical BMPs to protect streams from the adverse effects of construction activities, and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.

Groundwater Recharge

Policy OS-A.13: The County shall encourage, where economically, environmentally, and technically feasible, efforts aimed at directly or indirectly recharging the county's groundwater.

Policy OS-A.15: The County shall, to the maximum extent possible, maintain local groundwater management authority and pursue the elimination of unwarranted institutional, regulatory, permitting, and policy barriers to groundwater recharge within Fresno County.

Policy OS-A.16: The County shall permit and encourage, where economically, environmentally, and technically feasible, over-irrigation of surface water as a means to maximize groundwater recharge.

Policy OS-A.17: The County shall directly and/or indirectly participate in the development, implementation, and maintenance of a program to recharge the aquifers underlying the county. The program shall make use of flood and other waters to offset existing and future groundwater pumping.

Water Quality

Policy OS-A.23: The County shall protect groundwater resources from contamination and overdraft by pursuing the following efforts:

- a. Identifying and controlling sources of potential contamination;
- b. Protecting important groundwater recharge areas;
- c. Encouraging water conservation efforts and supporting the use of surface water for urban and agricultural uses wherever feasible;
- d. Encouraging the use of treated wastewater for groundwater recharge and other purposes (e.g., irrigation, landscaping, commercial, and nondomestic uses);
- e. Supporting consumptive use where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area;
- f. Considering areas where recharge potential is determined to be high for designation as open space; and
- g. Developing conjunctive use of surface and groundwater.

Policy OS-A.24: The County shall require new development near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in storm waters, flowing river, stream, creek, or reservoir waters.

Policy OS-A.25: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.

Policy OS-A.26: The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff.

Policy OS-A.29: In areas with increased potential for groundwater degradation (e.g., areas with prime percolation capabilities, coarse soils, and/or shallow groundwater), the County shall only approve land uses with low risk of degrading groundwater.

Fresno County Code of Ordinances

Title 14 of the County Code of Ordinances addresses items such as permitting and construction of groundwater wells (14.04, 14.08.), groundwater management (14.03), storm water discharges (14.24), and sewer connections and treatment (14.16). These ordinances require that the construction, operation, and destruction of groundwater wells and on-site sewer systems only be conducted under applicable permits. Permits for new wells and septic systems are obtained through the Fresno County Environmental Health Department.

The Fresno County Code (15.48.050.CC) defines the floodplain fringe as *“that area of the floodplain on either side of the regulatory floodway where encroachment may be permitted,”* (i.e., the floodplain fringe is the area within the 100-year floodplain, but outside the floodway).

3.9.4 Significance Thresholds

3.9.4.1 Appendix G Thresholds from the State CEQA Guidelines

A hydrology or water quality impact is considered significant if it would result in any of the following CEQA Guidelines, Appendix G Thresholds:

- a) *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater water quality;*
- b) *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);*
- c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;*
- d) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;*
- e) *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, cause flooding on- and off-site, or provide substantial additional sources of polluted runoff;*
- f) *Otherwise substantially degrade water quality;*

- g) *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;*
- h) *Place within a 100-year flood hazard area structures which would impede or redirect flood flows;*
- i) *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or*
- j) *Expose people or structures to impacts from inundation by seiche, tsunami, or mudflow.*

3.9.4.2 Additional Thresholds of Significance

Requirements identified in the County policies and plans are addressed by the significance thresholds above. There are no additional thresholds of significance used in this evaluation of hydrology and water quality.

3.9.5 Methodology of Analysis

Hydrology and water quality impacts were determined based on an evaluation of existing Project site surface and groundwater hydrology and water quality conditions, and consideration of Project water consumption and potential changes to surface and groundwater hydrology and quality due to Project ground disturbance and land uses. Comments received during the scoping process were also considered and used in this evaluation.

Scoping letters that contained specific concerns regarding hydrology and water quality resources included, but were not limited to the following letters:

- Letters from the California Department of Public Health, August 22, 2013 and September 27, 2013;
- Letter from the City of Reedley, September 13, 2013.
- Letter from Central Valley Flood Protection Board, August 23, 2013.

A copy of the Scoping Report which includes all the comment letters is provided in Appendix 1.

FEMA mapped the 100-year floodway and floodplain for the Project area in the late 1970s. FEMA's Flood Insurance Rate Maps (FIRMs) covering the Project site are Map Numbers 06019C2160H and 06019C2170H. The floodway on the FIRMs constitutes an adopted regulatory floodway. The regulatory floodway is the area within the floodplain that must be reserved in order to convey the 100-year flow without cumulatively increasing the 100-year water surface elevation by more than a foot. In addition, in 1971 the State of California through the CVFPB delineated and mapped the "designated" floodway for the Project area.

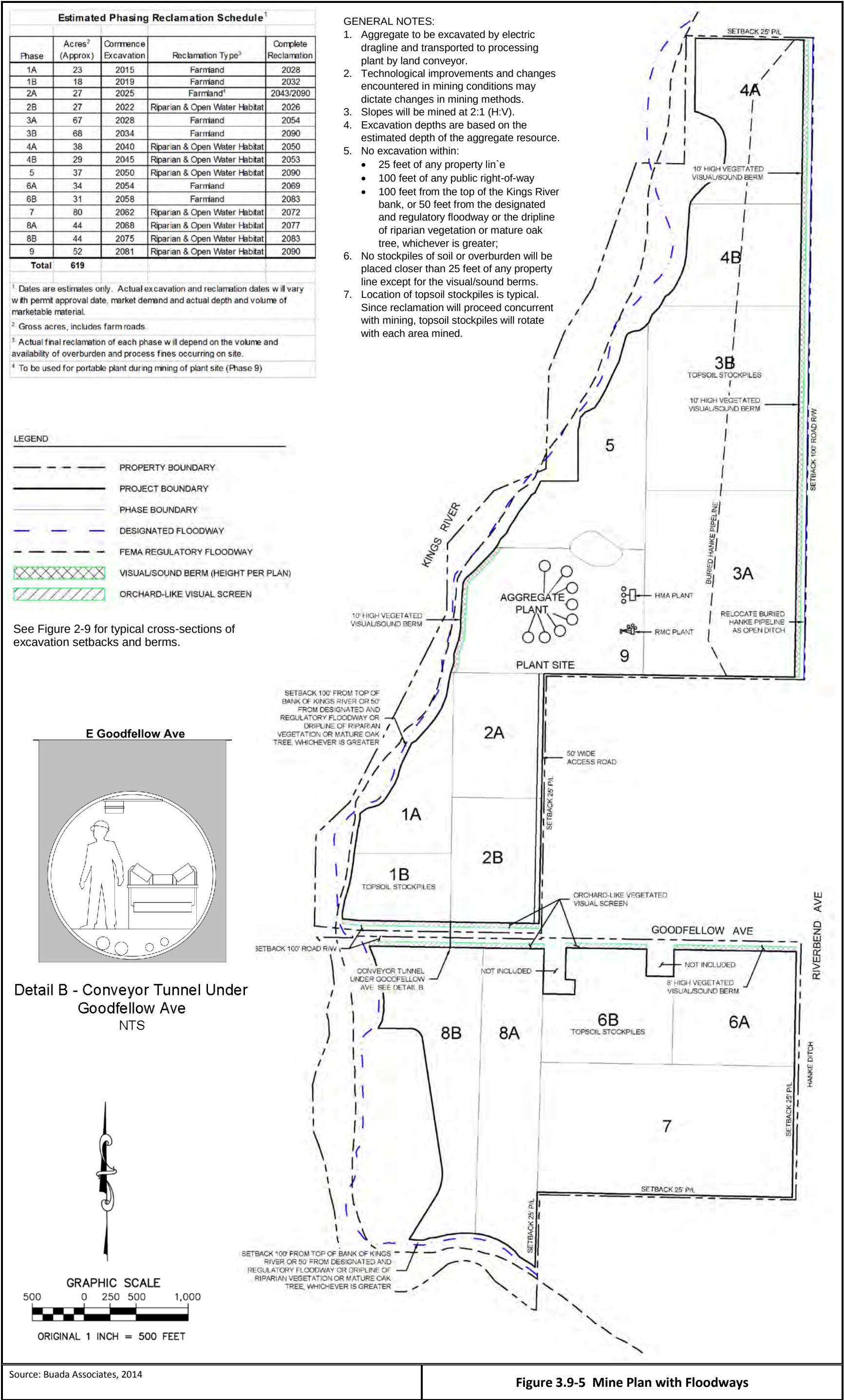
Since the floodplain and floodway delineations by FEMA and CVFPB were performed in the 1970s, it is likely that some of the physical changes that have occurred along the natural river corridor since then

may have altered the floodplain. Therefore an updated Hydraulic Flood Analysis (Chang, January 2014) was conducted using recent topographic mapping for the Project site and is provided in Appendix I. The results of the updated existing condition analysis indicates that the current floodplain on the Project site is significantly different than the mapped FEMA FIRM floodplain in several areas. Therefore the updated existing conditions analysis serves as the appropriate baseline for the Project site. As shown on Figure 3.9-5, the Project site is set back a minimum of 50 feet from regulated and designated floodways.

The Fresno County Code (15.48.050.CC) defines the floodplain fringe as *“that area of the floodplain on either side of the regulatory floodway where encroachment may be permitted,”* (i.e., the floodplain fringe is the area within the 100-year floodplain, but outside the floodway). In essence, this regulation allows encroachments that block the floodplain fringe as long as the floodway area is reserved to convey the 100-year flows. Since by definition the floodway water surface elevations can be up to a foot higher than the floodplain elevations (Fresno County Code 15.48.050.BB), the regulations permit projects to cause up to a foot in rise in the 100-year water surface elevations.

The only Project area that would block the floodplain fringe is the Plant site. All other project areas would either maintain or lower the ground within the floodplain fringe. Most of the floodplain regulations apply to insurable structures. The only potential insurable structures associated with the Project could be certain facilities within the Plant site.

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Project Design Features, BMPs and Environmental Protection and Minimization Measures

As discussed above and in Section 2.2.17, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project to minimize potential impacts on the environment. The following identifies some of the environmental protective measures that were considered during this evaluation:

- The Project would comply with BMPs and requirements identified in the SWPPP, WDRs, Hazardous Materials Business Plan, SPCC and the *Riverbend Sand and Gravel Surface Runoff and Drainage Plan* (Chang Consultants, 2013).
- Equipment and vehicle parking/storage areas would be graded to prevent stormwater runoff to surface water or into the groundwater. Vehicles would be prevented from entering the pond areas to assure that lubricants, fluids and fuels do not enter the ponds and safety berms would be installed around the perimeter of each mining area to prevent vehicles from inadvertently entering, and to prevent runoff from migrating into the ponds.
- BMPs (e.g., gravel bag or rock check dams along drainage swales, energy dissipaters, silt fencing or fiber rolls to contain drainage and sediment, lined swales, etc.) would be implemented to prevent stormwater runoff in accordance with the Project site SWPPP.
- The Project would not entail the use of settling basins.
- Mobile vehicles would be maintained and repaired in a covered shop or on paved surfaces. Such areas would be designed to collect pollutants.
- Inspection and maintenance programs would be established to ensure that vehicles and equipment are operating properly and leaks are prevented to the maximum extent feasible.
- All hazardous materials and hazardous waste would be managed and disposed of in accordance with local, State and Federal regulations. Agricultural chemicals, such as pesticides and fertilizers would not be stored at the Project site; all such chemicals would be removed from the Project site after application.
- Vehicles would be fueled on concrete pads next to the fueling areas. The fueling areas would be designed to manage stormwater so that it can be inspected before discharge in accordance with local, State, and Federal regulations. Fuel would be stored in double-wall concrete above ground storage tanks or in containment in accordance with regulations.
- Vehicle washing would take place in specific paved areas adjacent to the shop that are designed to drain to holding ponds, a concrete lined sump, or a holding tank, and to prevent stormwater run-off to surface or groundwater. Steam cleaning would take place on concrete or hard surface pads or in the enclosed shop, which would be designed to collect and retain pollutants. Such pollutants would then be disposed of in accordance with local, State and Federal regulations.
- All loading and unloading of materials would take place in designated areas that would be graded and designed to prevent stormwater runoff from entering the river.

- An inspection and maintenance program would be established to ensure that hazardous materials and waste handling areas, storage areas, tanks, and containers meet regulatory requirements.
- The Project site would be graded to prevent drainage and stormwater runoff from raw materials, products and by-products from entering the river.
- All erodible surfaces within the plant areas would be graded to prevent stormwater runoff to the river.
- Berms would be placed between the created ponds and farmland to prevent agricultural surface water runoff from entering the ponds.
- Topsoil that is stockpiled would not be placed beneath the groundwater level.
- The Project would avoid activities in the regulated and designated floodways. The phases to be reclaimed to farmland would be filled back to the original grade resulting in no change to the floodplain. The phases reclaimed back to ponds would actually increase the flood-holding capacity in those phases because the water surface in the ponds would be 15-20' feet below the original grade of the land.
- Dewatering of excavations would not be utilized for the proposed mining operations.
- Groundwater would be monitored quarterly to verify that groundwater levels are not adversely affected by the Project.
- If an abandoned underground storage tank is discovered, the County would be notified and the tank would be removed in accordance with the regulations and requirements.
- A permit would be obtained from the County for the septic system.
- If there are any on-site wells in areas that would be excavated, the wells would be abandoned in conformance with County and State regulations, under permit and inspection from the Fresno County Department of Public Health, Environmental Division, so that the wells do not become potential vertical conduits for contaminants.

Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

If materials from Phases 6A, 6B and 7 were to be processed at the CUP 3052 plant (Section 2.2.15.7), the relocation of a conveyor within the Project site would not create any different or additional effects on the hydrology or water quality.

3.9.6 Project-Level Impacts and Mitigation Measures

3.9.6.1 Issues Found to Have No Impacts

The following CEQA threshold was not evaluated because the Project does not include the construction of housing. As such, this criterion has been eliminated from further consideration.

g) *Would the Project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

The Project would not involve the construction of housing.

3.9.6.2 Water Quality Standards

Impact Statement

Impact HWQ-1: Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater water quality? (**CEQA Guidelines Thresholds (a) and (f)**)

Impact Analysis

Water quality impacts could potentially result from Project activities such as the use and storage of fuels and chemicals, possible runoff discharges from the Project site, exposure of groundwater through excavation of mine pits and routine agricultural practices.

The use of hazardous materials during mining operations would mainly include fuels, lubricants, and fluids associated with vehicles and equipment used in mining operations. As discussed in Section 3.9.5 and summarized below, a variety of management practices and design features would minimize the possibility of significant releases of these substances.

Motor fuel (diesel and gasoline) would be used at the Project site and stored in an AST tank in the plant area. Liquid asphaltic cement would be imported by truck and stored in ASTs. The ASTs would include appropriate secondary containment, as necessary. Vehicles and equipment would be fueled on concrete pads next to the fuel AST. The fueling areas would be designed to handle stormwater in accordance with local, State, and Federal regulations. Storage, transfer, spill avoidance, and spill response procedures would be documented in a site specific SPCC and/or a Hazardous Materials Business Plan. Upon reclamation, all lubricants, fuels, and hazardous substances would be permanently removed. Mobile equipment and vehicles would be maintained and repaired in a covered shop or on paved surfaces. Such areas would be designed to collect pollutants and inhibit spills from migrating to surrounding waters or soils. Waste products would then be disposed of in accordance with local, State, and Federal regulations. Inspection and maintenance programs would be established to verify that vehicles and equipment are operating properly and leaks are prevented.

Mining would extend beneath the groundwater level, which would cause creation of ponds due to exposure of groundwater. In some cases, agricultural operations may be ongoing in proximity to exposed groundwater. Mining areas containing exposed groundwater would be protected from runoff and overspray of pesticides and herbicides used in agricultural operations. Pesticide and herbicide applications in agricultural areas would be conducted in compliance with State and Federal regulations and industry best practices. Roads would be in place between agricultural areas and mining areas,

creating setbacks. In addition, berms and roadside ditches would be placed between the ponds and agricultural areas to prevent agricultural runoff from entering the ponds.

Agricultural chemicals such as fertilizers, pesticides, and herbicides are currently used at the Project site and would continue to be used during the Project on portions of the Project site where agriculture occurs. The chemicals would not be stored at the Project site; all such chemicals would be removed from the Project site after application. Because the Project would decrease the acreage used for agriculture, less agriculture chemicals would be applied, which is considered a beneficial impact (KDSA, 2013). Groundwater quality monitoring adjacent to exposed groundwater ponds at aggregate operations has not produced evidence of airborne residue from agricultural chemicals in groundwater.

The exposure of groundwater in the ponds could result in some biological degradation (i.e. coliform bacteria from bird droppings). However, the water in the ponds would migrate down gradient and any biological constituents previously introduced would be removed through natural filtration.

Washing of materials at the plant would result in generation of a slurry composed of silt and water. However, unlike many existing aggregate facilities, the Project would not entail use of settling basins. The water and silt materials from this slurry would be segregated on-site. Water segregated from the slurry would be recirculated back into the plant, and silt materials would be placed as backfill in areas where mining has been completed. The plant would not cause the silt materials to be affected by hazardous substances, so the materials would still essentially consist of a native material. Therefore, backfilling with silt materials would not be expected to affect quality of surface water or groundwater.

Topsoil would be removed prior to mining each phase and stored separately for later use as final cover for reclaimed farmland and final slopes of ponds. Because topsoil could potentially be affected by agriculture related chemicals, it would not be placed beneath the highest anticipated groundwater elevation. Overburden would be removed and stored for later use as fill or transported directly to fill the phases to be reclaimed as farmland.

The Project would involve installation of a septic system for disposal of domestic wastewater generated at the Project site. Installation of the septic system would require acquisition of a permit from Fresno County Environmental Health Department. Construction and operation of the septic system in conformance with County requirements would reduce any potentially significant water quality impacts associated with septic discharges to less than significant levels.

Some of the existing on-site irrigation wells are located in areas that would be excavated for mining purposes. Prior to mining in these areas, such wells would be abandoned in conformance with County and State regulations so that the wells do not become potential vertical conduits for contaminants.

None of the existing domestic wells will be used for the Project. Since the Project will have at least 25 employees and operates at least six months a year, a nontransient noncommunity water system, as defined by Section 116275 of the California Health and Safety Code, will be required. The operator will

be required to obtain a Domestic Water Supply Permit from the California Department of Public Health (CDPH) prior to operation. If a new groundwater well is drilled to meet domestic water demands, a site plan will be filled with the Domestic Water Supply Permit application. Since the mining excavation would terminate at 100 feet, the well would be sealed with an annular seal to a depth of at least 125 feet. Therefore, the water production zone for the domestic well would not be disturbed, and bacterial and chemical contamination of the well would not occur.

As a result of the factors described above, the Project would have a less than significant impact on water quality under criterion “a” above.

Level of Significance Before Mitigation

Less Than significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable

3.9.6.3 Groundwater**Impact Statement**

Impact HWQ-2: Would the Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (CEQA Guidelines Threshold (b))

Impact Analysis

Components of the Project potentially affecting groundwater supplies would be the mining related consumptive water use, and increased evaporative losses of exposed groundwater due to creation of several open water ponds. Surface water has been and would continue to be used for irrigation of agricultural lands at the Project site. Groundwater would be exclusively used to supply Project related mining needs.

Table 3.9-4 Project Site Water Budget

Item	Baseline (AF/yr)	Mid-mining (AF/yr)	End of mining (AF/yr)	Post-Reclamation (AF/yr)
Crop Related Use				
Applied as irrigation	2,320	1,375	650	1,005
Reduction in surface water use compared to existing conditions	NA	945	1,670	1,315
Total crop consumptive use	1,630	955	450	695
Groundwater (Mining Related) Use				
Plant operations	0	180	180	0
Landscape irrigation	0	15	20	0
Pond evaporation	0	280	1,060	1,060
Riparian evapotranspiration	0	20	60	70
Total mining consumptive use	0	495	1320	1130
Combined Crop Irrigation and Mining				
Total Crop and Mining Consumptive Use (Surface water and groundwater)	1,630	1,450	1,770	1,825
Change in Overall Consumptive Use Compared to Baseline	0	(180)*	140	195
Reduction in surface water use compared to existing conditions (repeated from above)	NA	945	1,670	1,315
Change to water budget (reduction) compared to existing conditions (Change in Overall Consumptive Use + reduction in surface water use)	NA	765**	1,810**	1,510**

*Water consumption as of the mid-point of the mining phase of the Project would be less than baseline.

Source: KDSA 2013

** This would be the reduction if surface water was not kept on-site and if the Kings River and shallow groundwater were not in hydrologic connection. Source: KDSA, 2014

The Project water budget calculated by Schmidt (KDSA, 2013) is provided in Appendix I. Agriculture would continue to occur throughout the Project duration in areas not yet disturbed by mining, and in areas where mining and reclamation backfilling have been completed. Irrigation water for these areas would continue to be obtained from the Hanke Ditch and Kings River. Currently, approximately 2,320

AF/yr is delivered to the Project site for irrigation of crops. Of this, approximately 1,630 AF/yr is consumed by the crops, and the remainder percolates to the aquifer.

The demand for crop irrigation would decline as portions of the Project site are converted from agriculture to mining. As the agricultural acreage decreases, demand for crop irrigation would decrease to approximately 650 AF/yr by the end of the mining phase. After mining and reclamation are complete, additional acreage would have been converted back to agricultural use, and the irrigation demand is expected to increase to approximately 1,005 AF/yr, which is less than half of the baseline consumption surface water use for irrigation of 2,320 AF/yr.

Groundwater would be used to supply the Project's mining related water demand. Mining related water usage would include pond evaporation, landscape irrigation, and plant operations. Plant related consumption would consist of plant and site-wide dust suppression, and losses associated with outgoing products such as concrete and rinsed aggregate products.

The maximum mining related water consumption during mining would be approximately 1,320 AF/yr, which would occur during the final phases of mining. Most of this consumption would consist of evaporation from ponds that would be created by the Project. Plant related consumption would average 180 AF/yr, and would be minimized by recirculating process water. After mining and reclamation conclude, plant operations would cease and groundwater consumption would be limited to pond evaporation and riparian plant evapotranspiration, totaling approximately 1,130 AF/yr. Overall, the Project would cause surface water consumption to decrease and groundwater consumption to increase.

The pan evaporation for the Project vicinity is indicated to average 65 inches per year. A pan coefficient of 0.8 is considered applicable to relatively small ponds, such as those proposed at the project site. Therefore, the total pond evaporation at the Project site would be 52 inches per year. Deducting the rainfall entering the ponds (12 inches per year) from the total evaporation, the net pond evaporation would be 40 inches per year, or 3.34 feet per year (KDSA, 2013). At mid-mining the evaporation from the 83 acres of ponds, at 3.34 feet per year, would be approximately 280 acre-feet per year. At the end of mining and post-reclamation the pond evaporation from the 318 acres of ponds would be approximately 1,060 acre-feet per year (318 acres x 3.34 feet per year).

As shown in Table 3.9-4, the existing water budget consists of the combination of the amount of surface water and groundwater currently used at the Project site. The changes to the water budget are the changes to the amount of surface water and groundwater that would be used as a result of the Project compared to the existing water budget. There would be a change in the water budget on the Project site. At mid-mining, there would be a reduction of 765 AF/yr (945 AF/yr less surface water used minus 180 AF/yr less consumptive use). At the end of mining, there would be a reduction of 1,810 AF/yr (1,670 AF/yr less surface water used plus 140 AF/yr increased consumptive use). After reclamation concludes, there would be a reduction of 1,510 AF/yr (1,315 AF/yr less surface water used plus 195 AF/yr increased consumptive use). If all the surface water currently being used for crop irrigation on the Project site continued to be delivered to the Project site, there would be a reduction of approximately 140 af/yr at the end of mining and 195 AF/yr after reclamation concludes.

Due to the Project site's proximity to the Kings River and the coarse-grained nature of the aquifer, local groundwater and Kings River are extensively interconnected and it is appropriate to consider the Kings River and groundwater as one interconnected hydrologic system. Monitoring results from a nearby operation along the Kings River have shown that water level elevations for stages in the Kings River have agreed well with groundwater in nearby monitor wells (KDSA, 2014).

As indicated in Table 3.9-4, less surface water would be used compared to the baseline, and the overall consumption of water (surface water for crop use and groundwater for mining use) would increase mainly due to plant operations and/or pond evaporation. The result would be a reduction in the water budget for the Project site and a possible reduction in groundwater levels. However, as stated above, the aquifer in the Project site vicinity is recharged from local surface water bodies. Since the Kings River and the shallow groundwater are hydraulically interconnected, lower groundwater levels would allow more water to seep in from the Kings River and thus will counterbalance a water-level decline. Any potential decrease in groundwater levels would be less than 5 feet (KDSA, 2014). Therefore, the increase in water consumption would not significantly affect groundwater levels in the vicinity or existing off-site wells. Since less water would be diverted from the Kings River for irrigation at the Project site, there would be no net loss of water from the Kings River. Thus, the Project's increase in water consumption is considered minor compared to the baseline consumption, and to the available storage in the Subbasin (KDSA, 2014). Quarterly groundwater monitoring would be required to verify that groundwater levels are not adversely affected by the Project. The results from this monitoring will be compared to baseline values and climatic conditions to determine if there is an adverse effect.

The potential for decreasing the amount of groundwater flow to the southwest was evaluated. After mining, some of the previously mined areas would be backfilled with overburden and silt materials expelled from the plant. Because these materials are mostly fine grained, this backfill could decrease the rate of groundwater flowing through the site. However, Phase 2A would not be backfilled, and would instead be reclaimed as an open water feature. This is expected to provide a "window" through which groundwater flow to the River would not be inhibited (KDSA, 2013). Groundwater would also be able to move downward beneath the backfill, and then move laterally toward the southwest. The groundwater would also be able to move around the northwest and southeast sides of the window.

Because the area over which silt backfill could affect groundwater flow (up to 269 acres) is minor compared to the overall area of the Kings Basin (976,000 acres), and because groundwater can still proceed through the "window," this potential impact is considered less than significant.

A Water Supply Assessment was prepared for the Project as required by SB 610 and provided in Appendix I. The Water Supply Assessment (KDSA, 2013) concludes that there is an adequate supply of water available for the Project through at least the SB 610 required analysis period of 20 years, without interfering with existing or future groundwater uses. Available water supplies are sufficient to serve the demand generated by the Project, as well as the reasonably foreseeable demand in the region under

average normal year, single dry year, and multiple dry year conditions. Therefore, a less than significant impact to groundwater supplies would occur as a result of the Project consumptive water use.

The cumulative incremental increase in water consumption of up to 195 AF/year is minor, and is not expected to substantially affect groundwater levels in existing wells located off-site. The area over which backfill could affect groundwater flow is minor and groundwater would still proceed through the “window.” As a result of the factors discussed above, this analysis concludes that the Project would have a less than significant impact on groundwater supplies and groundwater recharge under criterion “b” above.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None Required

Level of Significance After Mitigation

Not applicable

3.9.6.4 Erosion and Siltation**Impact Statement**

Impact HWQ-3: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? **(CEQA Guidelines Threshold (c))**

Impact Analysis

The Project would not affect the banks, channel, or capacity of the Kings River. As shown on Figure 3.9-5, Project elements would be set back 50 feet from the designated and regulated floodways and would not alter the designated and regulated floodways.

No natural surface water courses traverse the s Project site, so excavation of mine pits is not expected to affect flows in surface waters such as the Kings River. Runoff that currently occurs from the portions of the Project site to be reclaimed as ponds would be eliminated since these areas would no longer be irrigated and all precipitation that falls on these areas would be retained. As documented by Chang (Chang Consultants, 2013) and discussed above, numerous erosion and sediment controls would be deployed in conjunction with the Project. These control measures, summarized below, are intended to minimize or eliminate erosion and releases of sediment from the Project site into surrounding drainages.

Erodible surfaces would be graded to prevent runoff discharges to the Kings River. Berms would be placed between the created ponds and farmland to prevent agricultural runoff from entering the ponds.

Energy dissipaters such as sediment catchment basins or sumps, ditches, and berms, would reduce erosion, trap sediment, and minimize the potential for off-site transport of pollutants. Operations would minimize the extent of disturbed areas. When practical, reclamation and revegetation would be conducted concurrently, and would stabilize previously disturbed areas and slopes.

The Project would obtain coverage under the General Permit for Discharges of Storm Water Associated with Industrial Activities (Permit Order 97-03-DWQ). All of the Project site operational areas would be covered by this General Permit, including the mining area, haul roads, and plant area. Agricultural portions of the Project site would be subject to the Irrigated Lands Regulatory Program overseen by the RWQCB.

As required by the Industrial Activities Storm Water Permit, a site-specific SWPPP would be prepared and implemented. The SWPPP would contain BMPs associated with potential discharge areas, hazardous materials, and sediment and erosion control measures. Monitoring and inspections required by the permit would be conducted to determine if changes to the erosion and sediment controls are warranted.

Post reclamation hydrology would be similar to that of the late mining phase. Runoff generated within the pond areas would continue to be retained. A series of berms and ditches would remain to avoid discharges from agricultural areas into the ponds. Agricultural portions of the Project site would continue to be subject to the Irrigated Lands Regulatory Program overseen by the RWQCB. Reclamation activities, such as Revegetation, would further reduce the chance of discharging sediment laden runoff from the Project site.

The pond slopes will be cut slopes of native materials, not fill slopes. Factors of safety calculated by Tetrattech (Tetra Tech, 2013) exceed 1.5 for static and 1.3 for pseudo-static (seismic) conditions. These calculated factors of safety indicate that the proposed slopes would be suitably stable against gross failure for the anticipated long term conditions, including the effects of seismic shaking. Saved topsoil will be placed on the slopes above the groundwater levels. The final slopes will be seeded with erosion control grasses and planted with native trees and shrubs, which would stabilize the soil and prevent erosion.

The Project does not involve alteration of the existing water bodies, and the ponds would contain their own runoff. As a result of implementation of sediment and erosion control measures, the Project is not expected to exacerbate the flow or pollutant load of nearby drainages. As a result of the factors discussed above, the Project would have a less than significant impact under criterion "c" above.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None Required

Level of Significance After Mitigation

Not applicable

3.9.6.5 Surface Runoff Resulting in Flooding**Impact Statement**

Impact HWQ-4: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? **(CEQA Guidelines Threshold (d))**

Impact Analysis

The Project would not affect the banks, channel, or capacity of the Kings River. As shown on Figure 3.9-5, Project elements would be set back 50 feet from the designated and regulated floodways, would not alter the designated and regulated floodways, and would not involve construction of dikes or other structural flood control features.

Regulatory Floodway (FEMA)

Section 15.48.080.F.2 of the Fresno County Code states: *“Within an adopted regulatory floodway, the county shall prohibit encroachments, including fill, new construction, substantial improvements, and other development, unless certification by a registered civil engineer is provided demonstrating the proposed encroachment shall not result in any increase in flood levels during the occurrence of the base discharge [100-year discharge].”*

Similar language is contained in Title 44 of the Code of Federal Regulations (44 CFR §60.3(d)(3)), pursuant to which a community shall *“prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.”*

The Project would be set back 50-feet from and does not propose encroachments into the regulatory floodway. Therefore, the Project would comply with County and federal floodway regulations.

Designated Floodway

The Central Valley Flood Protection Board (CVFPB) oversees flood control and protection within the Central Valley. (23 CCR §2(b).) CVFPB regulations state that projects located “within any area for which there is an adopted plan of flood control” must obtain a permit prior to engaging in listed activities, including filling and construction of a structure. (23 CCR §6(a).) An “adopted plan of flood control” is a flood control or reclamation strategy for a specific area; it includes areas within 10 feet of levy systems, and the area between the boundaries of a designated floodway. (23 CCR §4(a).) The Kings River has an adopted plan of flood control, authorized in Section 12662 of the California Water Code.

A “Designated Floodway” means either: (1) the channel of the stream and that portion of the adjoining floodplain reasonably required to provide for the passage of a design flood, as indicated by floodway encroachment lines on an adopted map; or (2) the floodway between existing levees as adopted by the board or the Legislature. (23 CCR §4(i).) Construction is regulated within designated floodways as bounded by encroachment lines on the State's published map. Activities that will not impede the flow of water, including excavation activities, are permitted within the Designated Floodway, subject to certain conditions. Only structures that will have a “minimum effect upon the flow of water and are firmly anchored” may be constructed. (23 CCR §107(g).) The boundaries of Designated Floodways are set by the CVFPB, and can be altered if geographic conditions change. (23 CCR §§101, 106.)

Permits may also be required for projects “located outside an area over which there is an adopted plan of flood control . . . if it is foreseeable that the plan of work could be injurious to or interfere with the successful execution, function, or operation of any facilities of an adopted plan of flood control or of a plan under study.” (23 CCR §6(c).)

Because the Project would be set back 50 feet from the Designated Floodway, would not include activities within 10 feet of the levy system, and would not be injurious to or interfere with the operation of any facilities of an adopted plan of flood control or a plan under study, the Project would not be required to obtain a CVFPB permit.

The Project would not substantially change rates or volumes of surface water to the Kings River or other drainages. No significant surface water features traverse the Project site, and post reclamation grading of backfilled areas would maintain the relatively flat surfaces. Runoff that currently occurs from the portions of the Project site to be reclaimed as ponds (351 acres) would be eliminated since these areas would no longer be irrigated and all precipitation falling within these areas would be contained within the ponds and discharges would not occur. Runoff would be managed as described in the analyses above. The phases reclaimed back to ponds would actually increase the flood-holding capacity in those phases because the water surface in the ponds would be 15 -20 feet below the original grade of the land.

The Project site currently receives irrigation water deliveries from Hanke Ditch, demand for which would decrease due to decreasing agricultural acreage as a result of the Project. Flows in Hanke Ditch are determined by the demand for irrigation water. A decrease in irrigated acreage will decrease the demand and therefore the volume of flow. Therefore, flow in Hanke Ditch would decrease downstream

of the Project site, and would not exceed its designed maximum flow or result in increased siltation or erosion. The portion of Hanke Ditch traversing the Project site actually consists of a pipeline, which would be relocated as part of the Project. The pipeline would be relocated to the eastern Project site boundary as an open ditch. The capacity of Hanke Ditch would not change as a result of the relocation.

Because the Project would not alter streams or rivers, or substantially alter or add to existing runoff volumes, the Project would not increase the potential for flooding on or off-site and therefore would not result in any significant impacts under criterion “d” above.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None Required

Level of Significance After Mitigation

Not applicable

3.9.6.6 Stormwater**Impact Statement**

Impact HWQ-5: Would the Project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, cause flooding on- and off-site, or provide substantial additional sources of polluted runoff? **(CEQA Guidelines Threshold (e))**

Impact Analysis

The analysis of Impact HWQ5 is the same as for Impact HWQ3 above.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None Required

Level of Significance After Mitigation

Not applicable

3.9.6.7 100 Year Flood

Impact Statement

Impact HWQ-6: Would the Project place within a 100-year flood hazard area structures which would impede or redirect flood flows? **(CEQA Guidelines Threshold (h))**

Impact Analysis

The Project would not affect the banks, channel, or capacity of the Kings River. As shown on Figure 3.9-5, Project elements would be set back 50 feet from the designated and regulated floodways, would not alter the designated and regulated floodways, and would not involve construction of dikes or other structural flood control features.

A ten-foot high sound wall would be constructed between the Kings River and the plant area, within the 100-year flood hazard zone. However, this would not be a continuous structure capable of affecting flood flows. The portion of the plant site within the floodplain fringe would contain various production related structures. The results from the Hydraulic Flood Analyses show that any plant fill within the floodplain fringe will not change the 100-year surface water elevations (Chang, 2014). There would be a minimum of a 50-foot setback from the regulated and designated floodways. The phases to be reclaimed to farmland would be filled back to the original grade, resulting in no change to the floodplain. The phases reclaimed back to ponds would actually increase the flood-holding capacity in those phases because the water surface in the ponds would be 15 – 20 feet below the original grade of the land. Based on this evaluation, the Project would not result in significant impacts under criterion “h” above.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None Required

Level of Significance After Mitigation

Not applicable

3.9.6.8 Flooding

Impact Statement

Impact HWQ-7: Would the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? **(CEQA Guidelines Threshold (i)).**

Impact Analysis

The mining areas would be set back at least 50 feet from the Kings River designated and regulated floodways. However, the Hydraulic Flood Analysis (Chang, February 2014) indicates that portions of the plant site are within the floodplain fringe. Exceptionally high Kings River flows associated with heavy precipitation and/or meltwater could potentially result in flooding, which could potentially expose employees or structures to significant risk of loss or injury.

The closest significant dam to the Project site, the Pine Flat Dam, is located approximately 14 miles to the northeast (upstream). The dam has withstood numerous earthquakes since it was constructed, and a catastrophic earthquake-induced failure of the dam is considered unlikely.

Because portions of the plant site are located within the floodplain fringe, the Project could result in potentially significant impacts under criterion “i” above.

Level of Significance Before Mitigation

Potentially significant

Mitigation Measures***Mitigation Measure HWQ-1:***

To mitigate the risk of loss or injury potentially resulting from flooding, the operator shall implement a system to regularly monitor public announcements concerning potential Kings River flooding. At the beginning of each day that employees are to work in areas mapped within the 100-year flood hazard zone, the operator must check with the National Weather Service to determine if flood warnings are in effect. The operator must communicate the flooding potential to all employees each day. Employees must avoid working in portions of the Project site that are within the flood hazard zone. In addition, access to areas of the Project site subject to potential flooding shall be physically demarcated with signage and deterrents such as traffic barricades.

Level of Significance After Mitigation

Less Than Significant

3.9.6.9 Seiche, Tsunami or Mudflow**Impact Statement**

Impact HWQ-8: Would the Project expose people or structures to impacts from inundation by seiche, tsunami, or mudflow? **(CEQA Guidelines Threshold (j))**

Impact Analysis

A seiche is a standing wave that can occur in small water bodies such as basins, swimming pools, and lakes. The wave can reduce water levels at one end of the water body and increase the water level on the other, similar to the “sloshing” of water back and forth. Seiches can occur as a result of seismic shaking.

The Project would involve creation of a series of relatively small open-water ponds, which may be subjected to seismic shaking. However, the banks of these ponds would be approximately 10 to 15 feet high, so even if a seiche occurs, the inundation is considered unlikely.

The Project is not near the coast, so it is not susceptible to inundation by a tsunami. The slope angles and geologic materials would not be conducive to the formation of mudflows. Based on this evaluation, the Project would not result in significant impacts under criterion “i” above.

Level of Significance Before Mitigation

Less Than significant

Mitigation Measures

None Required

Level of Significance After Mitigation

Not applicable

3.9.7 Cumulative-Level Impacts and Mitigation Measures

The cumulative context for hydrology and water quality impacts includes the Fresno valley as well as the Kings River Watershed for surface water impacts and the Kings River Water District for groundwater impacts.

As discussed in Section 3.9.6.1, CEQA Guidelines Threshold g) was determined to have no impact and therefore further evaluation is not considered necessary. The potential cumulative impacts associated with CEQA Thresholds a), b), c), d), e), f), h), i) and j) are discussed below.

Would the Project, when considered in conjunction with other cumulative projects, violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater water quality? (CEQA Guidelines Thresholds (a) and (f))?

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the

County General Plan and were determined to have a less than significant impact. They would be required to comply with numerous local, State and Federal regulations relating to water quality and waste discharge requirements. These could include but are not limited to: NPDES, SWPPP, Hazardous Materials Business Plan, Section 404 Permits, Section 1600 Stream Alteration Agreements, Stormwater Permit, Sewer and Septic System Permits. Therefore, overall cumulative impacts associated with water quality and waste discharge are considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. It is also assumed that, if they are approved, the projects would comply with water quality and waste discharge regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.2, the Project would include numerous design features and BMPs to protect water quality. There would be a site specific Hazardous Materials Business Plan, SWPPP and, if necessary, SPCC Plan. The employees would be trained in hazardous materials management and spill and emergency response procedures. The Project would comply with all applicable local, State and Federal requirements and regulations and obtain the necessary permits. Therefore the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with water quality and waste discharge would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (CEQA Guidelines Threshold (b))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. The net amount of water required for the Carmelita mining project would be substantially less than the net amount of water that is currently being used for the orchards that occupy the Carmelita site. The Sanger - Centerville Operations Expansion proposed to use deep well water, eliminate its diversion and use of Kings River water, and cease pit dewatering. The project wells would only be drawing deep water below the confining clay bed and there would be no significant drawdown resulting from the project pumping in the shallow water supply wells mainly used for agriculture in the vicinity. The Kings River Sand and Gravel project was approved as proposed to reduce permitted quarry operations. It is similar to the Sanger-Centerville project in that excavation would create two groundwater lakes. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger and would therefore most likely be supplied with groundwater from city wells. It is assumed that these projects would not be approved if they would result in a significant impact to groundwater supplies. The City intends to have a balanced long-term water supply through practicing recharge activities (KDSA, 2014). Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.3, components of the Project potentially affecting groundwater supplies are the mining related consumptive water use, and increased evaporative losses of exposed groundwater due to creation of numerous open water ponds. Surface water has been and would continue to be used for irrigation of agricultural lands at the Project site. Groundwater would be exclusively used to supply Project related mining needs.

As stated above, the aquifer in the Project site vicinity is recharged from local surface water bodies. A decrease in the use of surface water at the Project site and an increase in evaporation from the reclaimed ponds could lower groundwater levels. However, lower groundwater levels would allow more water to seep out of the river and thus will counterbalance any groundwater decline. Since less water would be diverted from the Kings River for irrigation at the Project site, there would be no net loss of water from the Kings River. Thus, the Project's increase in water consumption is considered minor compared to the baseline consumption, and to the available storage in the Subbasin. Any potential decrease in groundwater levels would be less than 5 feet (KDSA, 2014). Therefore, the increase in water consumption would not significantly affect groundwater levels in the vicinity or existing off-site wells. The effect of backfill on groundwater flow is minor, and groundwater would still proceed through the "window," as discussed in Section 3.9.6.3 above. Quarterly groundwater monitoring would be required to verify that groundwater levels are not substantially affected by the Project. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with groundwater supplies and groundwater recharge would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? (CEQA Guidelines Threshold (c))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. The on- or off-site drainage and erosion characteristics of the cumulative projects are site specific. None of the cumulative sites alter the course of a river or a significant creek. Alterations to other drainage patterns are subject to procedures to review and approve stream alterations through both State (Section 1600 Stream Alteration Agreement) and Federal (Section 404) permit processes. This includes impacts associated

with on- and off-site erosion and siltation. The process is designed to prevent cumulative erosion/siltation impacts to drainage systems. The projects would have SWPPPs and comply with the State General Permit for Stormwater. Given the mitigation measures required of the cumulative projects (which include minimum setbacks from, restrictions on drainage to, and separation of ponds from, the Kings River and Byrd Slough) and the relevant regulations, the cumulative impacts associated with the area projects to drainage patterns as it relates to erosion or siltation would be less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger and would not alter the course of a stream or river. It is also assumed that, if they are approved, the projects would comply with applicable regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Project does not involve alteration of the existing water bodies, and the ponds would contain their own runoff. No natural surface water courses traverse the Project site. Numerous erosion and sediment controls would be implemented as part of the Project, including the BMPs identified in the site specific SWPPP. The Project would comply with applicable regulatory requirements. Therefore the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with the existing drainage pattern as it relates to erosion or siltation would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (CEQA Guidelines Threshold (d))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. The on/or off-site drainage characteristics of the cumulative projects are site specific. The projects would have site specific SWPPPs and comply with the State General Permit for Stormwater. Given the mitigation measures required of the cumulative projects (which include minimum setbacks from, restrictions on drainage to, and separation of ponds from, the Kings River and Byrd Slough) and the relevant regulations, the cumulative impacts associated with surface runoff as it relates to flooding on or off-site would be less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger and would not involve significantly alter the drainage pattern of the area or alter the course of a stream in a manner that would result in flooding. It is assumed that if they are approved the projects would

comply with applicable regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Project would not change rates or volumes of surface water to the Kings River or other drainages. No significant surface water features traverse the Project site, and post reclamation grading of backfilled areas would maintain the relatively flat surfaces. Completed mine pits reclaimed as open water ponds would essentially be self-contained. Precipitation falling within these areas would be contained within the ponds and discharges would not occur. Runoff would be managed as described in Section 3.9.6.5. Therefore the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with the existing drainage pattern and surface runoff as it relates to flooding on or off-site would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, cause flooding on- and off-site, or provide substantial additional sources of polluted runoff? (CEQA Guidelines Threshold (e))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. The development of the cumulative projects would result in an increase in impervious surfaces and increase run-off from the sites. The sites are in rural areas that generally do not have stormwater drains. In addition, pollutants associated with parking lots, roads and landscaping combine with stormwater that could ultimately end up in the Kings River. However, the projects would be required to comply with applicable regulatory requirements including the BMPs identified in the site specific SWPPPs. Given the mitigation measures required of the cumulative projects (which include minimum setbacks from, restrictions on drainage to, and separation of ponds from, the Kings River and Byrd Slough) and the relevant regulations, the cumulative impacts associated with surface runoff as it relates to existing or planned stormwater drainage systems, flooding on- or off-site and additional sources of polluted runoff would be less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger and would most likely be located near a stormwater drain. It is assumed that if they are approved the projects would comply with their site SWPPPs, applicable regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Project would obtain coverage under the General Permit for Discharges of Storm Water Associated with Industrial Activities (Permit Order 97-03-DWQ). All of the Project site operational areas would be covered by the Permit, including the mining area, haul roads, and plant area. Agricultural portions of the

Project site would be subject to the Irrigated Lands Regulatory Program overseen by the RWQCB. The SWPPP would contain BMPs associated with potential discharge areas, hazardous materials, and sediment and erosion control measures. Monitoring and inspections required by the permit would be conducted to determine if changes to the erosion and sediment controls are warranted. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with the existing drainage pattern and surface runoff as it relates to flooding on- or off-site would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, place within a 100-year flood hazard area structures which would impede or redirect flood flows?))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger. There would be a minimum of a 50-foot setback from the regulated and designated floodways. The phases to be reclaimed to farmland would be filled back to the original grade resulting in no change to the floodplain. The phases reclaimed back to ponds would actually increase the flood-holding capacity in those phases because the water surface in the ponds would be 15'-20' below the original grade of the land. ? ***(CEQA Guidelines Threshold (h))***

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. The projects have been individually reviewed to ensure that no habitable structures are located within the 100-year flood hazard area. To the extent that the projects are located in the 100-year flood plains, conditions of approval require the installation of flood control measures to remove structures from the flood plain. Therefore, the overall cumulative impact is considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger. It is assumed that, if they are approved, the projects would comply with standard conditions of approval, require the installation of flood control measures, if applicable, and that they would be consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.7, the Project would not affect the banks, channel, or capacity of the Kings River and would not involve construction of dikes or other structural flood control features. There would be a minimum of a 50-foot setback from the regulated and designated floodways. The phases to be reclaimed to farmland would be filled back to the original grade resulting in no change to the floodplain. The phases reclaimed back to ponds would actually increase the flood-holding capacity in

those phases because the water surface in the ponds would be 15'-20' below the original grade of the land. Therefore the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with placing structures within the 100-year flood hazard area that could impede or redirect flood flow would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (CEQA Guidelines Threshold (i)) Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. It was concluded that these projects would not include the placement of structures, or expose people to significant risk associated with the failure of a levee or dam. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger. It is assumed that, if they are approved, the projects would be consistent with the County General Plan and would not include the placement of structures, or expose people to significant risk associated with the failure of a levee or dam. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.8, the Project mining areas would be set back at least 50 feet from the Kings River designated and regulated floodways. However, the Hydraulic Flood Analysis (Chang, January 2014) indicates that portions of the plant site are within the floodplain fringe. Exceptionally high Kings River flows associated with heavy precipitation and/or meltwater could potentially result in flooding, which could potentially expose employees or structures to significant risk of loss or injury. With the implementation of the identified mitigation measures HWQ-1 and HWQ-2, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with loss or injury involving flooding would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, cause inundation by seiche, tsunami, or mudflow? (CEQA Guidelines Threshold (j))

None of the cumulative projects nor the Proposed Project would be located in an area that would be subject to a seiche or tsunami. The approved slopes within the mining projects and the materials present in those areas are not conducive to the formation of mudflows. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with seiche, tsunami or mudflows would be less than significant.

3.9.8 Alternatives to Significant Effects

No Project Alternative

The No Project Alternative would avoid all Project-related impacts associated with hydrology and water quality. However, since the Project design features and BMPs already reduce impacts associated with these effects to less than significant, this alternative would not significantly reduce potential impacts.

Reduced Annual Production Alternative

This alternative would evaluate the potential impacts from artificially limiting the proposed production by a given amount. This alternative would not result in any changes that would impact hydrology or water quality; therefore, it would not reduce potential impacts associated with the Project.

Reduced Project Size Alternative

This alternative would evaluate the potential impacts from artificially reducing the Project footprint by some stated amount. As discussed in Section 4, Alternatives, the Reduced Project Size alternative would only reduce the project size by about 40 acres (or only about 6%) and would not significantly reduce impacts to hydrology or water quality; therefore, it would not reduce potential impacts associated with the Project.

Reduced Mining Depth Alternative

This alternative would evaluate the potential impacts from artificially reducing the mining depth by some stated amount. Annual use of process water would not be altered by this alternative. Long-term total water consumption due to aggregate production may be reduced due to a shortened project life and water evaporation would be reduced due to 30% less reclaimed open water habitat. This alternative would lessen a potentially, long-term impact on water consumption; however, because an excavator may be used it could require de-watering of the pits and create impacts to the local hydrology by lowering groundwater levels in the vicinity.

Different Phasing Alternative

This alternative would evaluate the potential impacts from revising the phasing plan. This alternative would not result in any change to potential impacts associated with hydrology or water quality; therefore, it would not reduce potential impacts associated with the Project.

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3.10 LAND USE & PLANNING

3.10.1 Introduction

The purpose of this section of the DEIR is to describe any impacts related to land use that would result from implementing the Project by evaluating the Project's compatibility with the Fresno County General Plan, Kings River Regional Plan, and other applicable regulatory documents related to land use, and recommend mitigation measures to reduce any potentially significant impacts below the level of significance.

Land use and planning aspects of the Project were primarily evaluated through the review of material provided by the applicant (Surface Mining and Reclamation Plan and technical reports) as compared to the County of Fresno General Plan, Kings River Regional Plan and Fresno County zoning ordinances. In addition, due to the similarity of the two projects, the DEIR for the Carmelita Mine and Reclamation Project was reviewed and discussions applicable to this Project were incorporated.

3.10.2 Environmental Setting

3.10.2.1 Regional Setting

The Project is located immediately east of the Kings River and generally west of Riverbend Avenue. The Project site is 1.5 miles southeast of urbanized areas in the City of Sanger (population 24,000) and 9 miles southeast of the City of Fresno. The Project site is located in the San Joaquin Valley, California's major agricultural region.

Existing land uses in Fresno County are predominantly agricultural (49 percent of the County's land area) and resource conservation (45 percent), including the public forestland and mountainous regions in eastern county areas.

Table 3.10-1 provides additional detail on countywide land uses.

Table 3.10-1. Fresno County Summary of Existing Land Uses

Generalized Land Use Category	Square Miles	Percent
Residential	152	2.6
Commercial	7	0.1
Industrial	11	0.2
Agriculture	2,911	49.0
Resource Conservation (national forests, timber preserves, etc.)	2,691	45.3
Unclassified (streets, highways, etc.)	11	0.2
Incorporated Cities	154	2.6
TOTAL	5,937	100.0

Source: Fresno County General Plan Background Report, 2000.

Fresno County has a steadily growing population, totaling over 930,000 at the time of the 2010 Census. This was an increase of 131,000, or 16 percent, over the 2000 Census figure of 799,000. All of this growth occurred within the incorporated areas of the County, or in areas adjacent to cities that were subsequently annexed. Unincorporated areas experienced an increase of only 2,500 residents (1.5 percent) over the decade.

3.10.2.2 Vicinity Setting

The vicinity where the Project is located is largely agricultural, with other uses including scattered rural residences, mining operations along the Kings River, a wastewater treatment facility, and urban development in Sanger.

Existing General Plan and zoning designations in the vicinity of the Project site are described in Table 3.10-2. The Kings River is located within the Open Conservation (O) zoning district. Existing and approved mining activities near the Kings River occur within the same zoning district as the Project site (AL-20).

Table 3.10-2. Site Vicinity General Plan Land Use Designations and Zoning

	General Plan Designation and Kings River Regional Plan Designation	Zoning
Project Site	Agriculture	AL-20 (Limited Agriculture)
North	Agriculture	AL-20 (Limited Agriculture)
South	Agriculture	O (Open Conservation) AL-20 (Limited Agriculture) AE-20 (Exclusive Agriculture)
East	Agriculture	AL-20 (Limited Agriculture)
West	Agriculture	O (Open Conservation) AL-20 (Limited Agriculture)

Source: Fresno County General Plan, Kings River Regional Plan, and Fresno County Geographic Information System.

3.10.2.3 Project Site Setting

The Project site is currently occupied by walnut and olive orchards and grape vineyards. Surrounding land use includes an aggregate mining operation with a ready-mix concrete plant to the north and an aggregate mining operation, approved to include a ready-mix concrete plant, to the east and southeast. Irrigated cropland with scattered farm residences are located to the east and across the Kings River to the west and south. Stone fruit orchards with several farm residences are located on the northwest corner of Goodfellow Avenue and Riverbend Avenue between the northern and southern parts of the Project site.

The existing zoning designation for the Project site is AL-20 (Limited Agriculture, 20-acre minimum lot size). As described in Section 817 of the Zoning Ordinance, this zone is intended to protect the general

welfare of the agricultural community by limiting intensive uses in agricultural areas where such uses may be incompatible with other, less intensive, agricultural operations. Surface mining operations and related facilities and activities are permitted in the AL-20 district, subject to a CUP and the provisions of Section 858 of the Zoning Ordinance.

In 1986, the California DOC Division of Mines and Geology published *Special Report 158 – Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region*, which delineated the Project site area (Kings River Resource Area) as one of two primary Portland cement concrete-grade (PCC-grade) aggregate producing areas serving the urbanizing areas of Fresno County. The State DOC classifies areas of known important mineral commodities, referred to as “Mineral Resource Zones” (MRZ), so that these areas may be given land use consideration by local agencies in their general plan preparation process. The Project site area is designated as MRZ-2, indicating that significant mineral deposits (i.e., sand and gravel) are present, or there is a high likelihood for their presence. Fresno County incorporated the MRZ-2 classification into the Mineral Resources Unit of the Open Space/Conservation Element of the General Plan in 1987.

In 1988, the State published SMARA Designation Report No. 8 (DR-8), which designated the Kings River Resource Area, including the Project site, as having construction grade aggregate deposits that are of regional significance (*Designation of Regionally Significant Construction Aggregate Resources in the Fresno Production-Consumption Region*, SMARA Designation Report #8, DOC and DMG, July 1988).

3.10.3 Regulatory Setting

3.10.3.1 Federal

There are no significant Federal land use and planning regulations that are directly applicable to the Project. The primary land use and planning laws, regulations, ordinances and policies that apply to the Project are discussed below under State and Local regulatory settings.

3.10.3.2 State

Surface Mining and Reclamation Act

The State agencies that implement SMARA are the DOC’s Office of Mine Reclamation and the State Mining and Geology Board (SMGB). However, at the local level, California employs a “lead agency” system to regulate surface mining activities. The lead agency responsible for regulating mining is generally a county or city. Fresno County is the lead agency for purposes of the Project.

SMARA requires that a lead agency’s land-use decisions be made in accordance with its mineral resource management policies, and that the lead agency consider the importance of the mineral resource to the region as a whole and not just the lead agency’s area of jurisdiction.

California Guidelines for Classification and Designation of Mineral Lands

The State's Guidelines for Classification and Designation of Mineral Lands coincides with SMARA by providing the State Geologist with direction in carrying out mineral resource classification of lands in California that are threatened by uses that will be incompatible with, or preclude development or conservation of mineral deposits. Designation is the process of identifying lands containing significant mineral deposits. Designation is the formal recognition by the SMGB, after consultation with lead agencies and other interested parties, of areas containing mineral deposits of regional or statewide significance. The objective of classification and designation processes is to ensure, through appropriate lead agency policies and procedures, that mineral deposits of statewide or regional significance are available when needed.

The State Geologist developed the MRZ nomenclature and criteria for use in the appraisal of the mineral resource potential of the land. Field and analytical data are integrated and evaluated for assigning MRZs in accordance with the mineral classification guidelines adopted by the SMGB.

3.10.3.3 Local**Fresno County General Plan**

The 2000 Fresno County General Plan is a comprehensive, long-term framework established for the protection of the County's agricultural, natural, and cultural resources. The County is currently revising the General Plan; however, it is not anticipated that the revisions will include major changes to goals or policies.

As identified in the General Plan, the County's primary role is seen as "the protector of prime agricultural lands, open space, recreational opportunities, and environmental quality, and the coordinator of countywide efforts to promote economic development." The General Plan has identified as Resource Lands those lands generally designated and devoted to agriculture, grazing, resource extraction, and other open space uses. As the Project intends to convert agricultural land uses to mineral extraction, and is located adjacent to open space areas along the Kings River, General Plan policies related to these categories are applicable in consideration of the Project.

Vision Statement

Agricultural Land Protection: The plan seeks to protect productive agricultural land as the County's most valuable natural resource and the historical basis of its economy through directing new urban growth to cities and existing unincorporated communities and by limiting the encroachment of incompatible development upon agricultural areas. Refer to Table 3.10-3 for applicable goals and policies.

Resource Protection: The plan seeks to protect and promote the careful management of the County's natural resources, such as its soils, water, air quality, minerals, and wildlife and its habitat, to support the County's economic goals and to maintain the County's environmental quality. Refer to Table 3.10-3 for applicable goals and policies.

Kings River Regional Plan

The Kings River Regional Plan (KRRP) was adopted on December 15, 1981, by the Fresno County Board of Supervisors and last amended on November 27, 1990. The KRRP fits within the framework of and refines the Fresno County General Plan. Approximately 19,500 acres are contained within the KRRP boundaries.

The KRRP contains the following land use designations: Agriculture, Open Space, Medium-Density Residential, and Public Facilities. Refer to Table 3.10-4 for applicable goals and policies.

Fresno County Zoning Ordinance

The principal tool for implementing the General Plan is through the Zoning Division of the Ordinance Code of the County of Fresno. This Zoning Ordinance, which must by State law be consistent with the General Plan, is more detailed in its standards and procedures than the General Plan. While the General Plan is long-term in perspective, the Zoning Ordinance is immediate in its application.

The existing zoning designation for the Project site is AL-20 (Limited Agriculture, 20-acre minimum lot size). As described in Section 817 of the Zoning Ordinance, this zone is intended to protect the general welfare of the agricultural community by limiting intensive uses in agricultural areas where such uses may be incompatible with other, less intensive, agricultural operations. Surface mining operations and related facilities and activities are permitted in the AL-20 district subject to a CUP and the provisions of Section 858 of the Zoning Ordinance.

Mineral resources are specifically identified in Section 858 as “valuable community assets which must be safeguarded against preemption by competing or conflicting land uses.” However, the County notes that mineral deposits are frequently located in areas which are also suited for other types of development or are in areas characterized by significant natural resources; therefore, care must be taken to ensure that mineral resources are recovered efficiently and safely, with minimal disruption to surrounding land uses and environmental values, and that sites are reclaimed to a usable condition which is readily adaptable for alternative land uses.

Substandard Lots for Resource Exploration and Extraction

The County may allow, by discretionary permit, creation of substandard size lots when such action is deemed necessary by the Board of Supervisors for the recovery of mineral resources and the exploration and extraction of oil and gas in accordance with the policies of Section OS-C, Mineral Resources, of the Open Space and Conservation Element. In no case shall such action result in creation of lots less than five gross acres in size.

3.10.4 Significance Thresholds

3.10.4.1 Appendix G Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, the Project would have a significant effect on public health and safety if it would:

- a) *Physically divide an established community;*
- b) *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;*
- c) *Conflict with any applicable habitat conservation plan or natural community conservation plan.*

3.10.4.2 Additional Thresholds of Significance

Requirements identified in the County policies and plans are addressed by the significance thresholds above. There are no additional thresholds of significance used in this evaluation of land use and planning.

3.10.5 Methodology of Analysis

The analysis in this section is based on a review of the California mineral classifications, applicable Fresno County General Plan goals and policies, County Zoning Ordinance requirements, Kings River Regional Plan and other applicable land use plans. The proposed activities associated with the Project were compared to these land use and zoning requirements in order to determine Project consistency. Because these policies and plans address many different resource areas, detailed analysis of some of the land use and zoning issues is provided in the specific resource section of this DEIR (Sections 3.1 – 3.12). The applicable County and regional land use elements were reviewed and summarized in relation to the Project's consistency on Table 3.10-3 and 3.10-4.

Scoping letters that contained specific concerns regarding land use and planning included, but were not limited to the following letter:

- Letter from John W Gray, September 15, 2013.

A specific concern that was brought up during scoping was whether the County General Plan and the Kings River Regional Plan would require updating to provide more appropriate guidelines that address the amount of mining activities in the area.

Project Design Features, BMPs and Environmental Protection and Minimization Measures

As discussed in Section 2.2.17, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project to minimize potential impacts on the environment.

Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

If materials from Phases 6A, 6B and 7 were to be processed at the CUP 3052 plant (Section 2.2.15.7), the relocation of a conveyor within the Project site would not create any different or additional effects on land use.

3.10.6 Project Impacts and Mitigation Measures**3.10.6.1 Issues Found to Have No Impact**

The following CEQA thresholds were evaluated and it was determined that the Project would have no impact, and these potential effects do not need to be further considered.

a) Would the Project physically divide an established community?

The Project site is not within an established community. The Project site currently consists of large, contiguous parcels with agricultural land and riparian areas, crossed by Goodfellow Avenue. Goodfellow Avenue would not be affected by Project development because it would remain open for public use throughout the Project term. Because there is not an established community in or around the Project site, and the Project would not close or sever any public roads in the area, the Project would not result in an impact relating to physically dividing an established community.

c) Would the Project conflict with any applicable habitat conservation plan or natural community conservation plan?

The Project site is not located within the boundaries of any adopted habitat conservation plan (HCP) or natural community conservation plan (NCCP). Portions of the Project site are within the planning area of the East Fresno HCP, which received initial grant funding from the USFWS in 2009. This HCP is still in the preliminary planning phase, and has not been adopted for use. Since there is no adopted HCP or NCCP affecting the Project area, the Project would result in no impact related to a conflict with any applicable habitat conservation plan or natural community conservation plan.

3.10.6.2 Conflict with Any Land Use Plan, Policy or Regulation**Impact Statement**

Impact LUP-1: Would the Project conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (**CEQA Guidelines Threshold Criteria (b)**)

Impact Analysis

A summary of the Project's consistency with the applicable 2000 Fresno County General Plan policies is presented in Table 3.10-3. Non-applicable policies are those that are considered to be the sole domain of the County for implementation or those that, by virtue of the Project characteristics and location, do not relate to the policy. Following this table is a consistency analysis of the applicable policies of the Kings River Regional Plan.

Table 3.10-3. General Plan

Policy	Consistency Analysis
AGRICULTURE AND LAND USE ELEMENT	
GOAL LU-A To promote the long-term conservation of productive and potentially productive agricultural lands and to accommodate agricultural-support services and agriculturally-related activities that support the viability of agriculture and further the County's economic development goals.	
LU-A.1 Agricultural Land Conservation The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available.	The Project is consistent with this policy. The Project is not an urban growth project; however, it would result in the temporary loss of 619 acres of Important Farmland and the permanent removal of 351 acres of Important Farmland. In accordance with LU-A.14, the County will review the proposed land conversion during the CUP process. An Agricultural Easement will be placed on 351 acres of Important Farmland as mitigation. In addition, County Policies OS-C.1, OS-C.2, and OS-C.10 each emphasize the necessity of mineral resource development on lands designated MRZ-2 over all other land uses, including agriculture. This classification indicates that both the County and the State believe that extraction of mineral resources on the site is a legitimate and valuable land use, even when it removes valuable farmland from production. Therefore the Project is considered consistent with this Policy. Potential impacts to agricultural resources are evaluated in Section 3.2.
LU-A.3 Special Agricultural Uses The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities, including value-added processing facilities, and certain nonagricultural uses. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria: - The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics; - The use should not be sited on productive agricultural lands if less productive land is available in the vicinity; - The operational or physical characteristics of the	The Project is consistent with this policy. Table LU-3, Typical Uses Allowed in Areas Designated Agriculture, in the Fresno County General Plan considers mineral extraction an allowed use pursuant to the policies in the Mineral Resources section of Open Space and Conservation Element.

Policy	Consistency Analysis
use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius; d. A probable workforce should be located nearby or be readily available; e. For proposed agricultural commercial center uses, the following additional criteria shall apply: 1. Commercial uses should be clustered in centers instead of single uses. 2. To minimize proliferation of commercial centers and overlapping of trade areas, commercial centers should be located a minimum of four (4) miles from any existing or approved agricultural or rural residential commercial center or designated commercial area of any city or unincorporated community. 3. New commercial uses should be located within or adjacent to existing centers. 4. Sites should be located on a major road serving the surrounding area. 5. Commercial centers should not encompass more than one-quarter (1/4) mile of road frontage, or one-eighth (1/8) mile if both sides of the road are involved, and should not provide potential for developments exceeding ten (10) separate business activities, exclusive of caretakers' residences. f. For proposed value-added agricultural processing facilities, the evaluation under criteria "a" above, shall consider the service requirements of the use and the capability and capacity of cities and unincorporated communities to provide the required services; and g. For proposed churches and schools, the evaluation under criteria LU-A.3a above shall include consideration of the size of the facility. Such facilities should be no larger than needed to serve the surrounding agricultural community. h. When approving a discretionary permit for an existing commercial use, the criteria listed above shall apply except for LU-A.3b, e2, e4, and e5.	

Policy	Consistency Analysis
LU-A.4 Resource Extraction in Agricultural Areas The County shall require that the recovery of mineral resources and the exploration and extraction of oil and natural gas in areas designated Agriculture comply with the Mineral Resources Section of the Open Space and Conservation Element.	The Project is consistent with this policy. Mining is a permitted use on the parcels of the Project site, subject to approval of a CUP. The conditions of approval would include the implementation of the mitigation measures presented in the various sections of this DEIR as well as the Reclamation Plan requirement to reclaim the Project's mined areas and processing area. With the approval of the CUP and implementation of mitigation measures, the Reclamation Plan, and other conditions, the Project would be consistent with this policy.
LU-A.11 Substandard Lots for Resource Exploration and Extraction The County may allow by discretionary permit creation of substandard size lots when such action is deemed necessary by the Board of Supervisors for the recovery of mineral resources and the exploration and extraction of oil and gas in accordance with the policies of Section OS-C, Mineral Resources, of the Open Space and Conservation Element. In no case shall such action result in creation of lots less than five (5) gross acres in size.	The Project is consistent with this policy. The area of the Project site that would be mined encompasses 619 acres, thereby exceeding the minimum acre requirement.
LU-A.12 Agricultural Protection In adopting land use policies, regulations and programs, the County shall seek to protect agricultural activities from encroachment of incompatible land uses.	The Project is consistent with this policy. County land use policy permits mining activities on the Project site, subject to the conditions established in a CUP. Therefore, with the approval of the CUP, the Project's mining operations would be consistent with this policy.
LU-A.13 Agricultural Buffers The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.	The Project is consistent with this policy. The Project site plan includes setbacks and/or screening buffers from the surrounding roadways and other sensitive receptors, which would protect agricultural operations from potential Project-related impacts.
LU-A.14 Agricultural Land Conversion Review The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required when appropriate.	The Project is consistent with this policy. The County will conduct a review and assessment of the Project and associated conversion of agricultural land during the CUP process. Impacts to agricultural resources are further discussed in Section 3.2.
LU-A.17 Williamson Act Contracts The County shall accept Williamson Act contracts on all designated agricultural land subject to location, acreage, and use limitations established by the County.	The Project is consistent with this policy. The Project site contains 88 acres of land protected by existing Williamson Act contracts. Because mining operations would begin on parcels not currently subject to a Williamson Act contract, and would be phased so that mining operations would not start in new mining areas until a Williamson Act contract, or portion thereof, has expired, this impact was found to be less than significant.

Policy	Consistency Analysis
GOAL LU-C To preserve and enhance the value of the river environment as a multiple use, open space resource; maintain the environmental and aesthetic qualities of the area; protect the quality and quantity of the surface and groundwater resources; provide for long term preservation of productive agricultural land; conserve and enhance natural wildlife habitat; and maintain the flood-carrying capacity of the channel at a level equal to the one (1) percent flood event (100-year flood).	
LU-C.1 Kings River Regional Plan The County shall regulate land use along the Kings River in accordance with policies of the Kings River Regional Plan.	The Project is consistent with this policy. Refer to Table 3.10-4 for a consistency with the Kings River Regional Plan.
LU-C.5 Kings River Aggregate Extraction The County may allow the extraction of rock, sand, and gravel resources along the Kings River consistent with the Kings River Regional Plan policies and Section OS-C, Minerals Resources, of the Open Space and Conservation Element.	The Project is consistent with this policy. Refer to Table 3.10-4 for a consistency with the Kings River Regional Plan. In addition, refer to Policy OS-C.11 below.
OPEN SPACE AND CONSERVATION ELEMENT	
GOAL OS-A To protect and enhance the water quality and quantity in Fresno County's streams, creeks, and groundwater basins	
Policy OS-A.13: The County shall encourage, where economically, environmentally, and technically feasible, efforts aimed at directly or indirectly recharging the county's groundwater.	The Project is consistent with this policy. The Project would continue to irrigate farmland and reclaimed farmland with surface water which would continue to recharge groundwater. Refer to Section 3.9.6.3.
Policy OS-A.15: The County shall, to the maximum extent possible, maintain local groundwater management authority and pursue the elimination of unwarranted institutional, regulatory, permitting, and policy barriers to groundwater recharge within Fresno County.	The Project is consistent with this policy. Project water will be recycled and surface water used to irrigate farmland would continue to recharge the groundwater. Refer to Section 3.9.6.3.
Policy OS-A.16: The County shall permit and encourage, where economically, environmentally, and technically feasible, over-irrigation of surface water as a means to maximize groundwater recharge.	The Project is consistent with this policy. Project water will be recycled and surface water used to irrigate farmland would continue to recharge the groundwater. Refer to Section 3.9.6.3.
Policy OS-A.17: The County shall directly and/or indirectly participate in the development, implementation, and maintenance of a program to recharge the aquifers underlying the county. The program shall make use of flood and other waters to offset existing and future groundwater pumping.	The Project is consistent with this policy. Project water will be recycled and surface water used to irrigate farmland would continue to recharge the groundwater. Refer to Section 3.9.6.3.

Policy	Consistency Analysis
OS-A.23: The County shall protect groundwater resources from contamination and overdraft by pursuing the following efforts: a. Identifying and controlling sources of potential contamination; b. Protecting important groundwater recharge areas; c. Encouraging water conservation efforts and supporting the use of surface water for urban and agricultural uses wherever feasible; d. Encouraging the use of treated wastewater for groundwater recharge and other purposes (e.g., irrigation, landscaping, commercial, and non-domestic uses); e. Supporting consumptive use where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area; f. Considering areas where recharge potential is determined to be high for designation as open space; and g. Developing conjunctive use of surface and groundwater.	The Project is consistent with this policy. The Project does not involve alteration of the existing water bodies and the ponds would contain their own runoff. As a result of implementation of sediment and erosion control measures, the Project is not expected to exacerbate the flow or pollutant load of nearby drainages. Refer to Section 3.9.6.4. Project water will be recycled and surface water used to irrigate farmland would continue to recharge the groundwater. A less than significant impact to groundwater supplies would occur as a result of the Project's consumptive water use. Refer to Section 3.9.6.3.
OS-A.24: The County shall require new development near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in storm waters, flowing river, stream, creek, or reservoir waters.	The Project is consistent with this policy. As a result of implementation of sediment and erosion control measures, the Project is not expected to exacerbate the flow or pollutant load of nearby drainages. Refer to Section 3.9.6.4.
OS-A.25: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.	The Project is consistent with this policy. As a result of implementation of sediment and erosion control measures, the Project is not expected to exacerbate the flow or pollutant load of nearby drainages. Refer to Section 3.9.6.4.
OS-A.26: The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff.	The Project is consistent with this policy. As a result of implementation of sediment and erosion control measures, the Project is not expected to exacerbate the flow or pollutant load of nearby drainages. Refer to Section 3.9.6.4.
OS-A.29: In areas with increased potential for groundwater degradation (e.g., areas with prime percolation capabilities, coarse soils, and/or shallow groundwater), the County shall only approve land uses with low risk of degrading groundwater.	The Project is consistent with this policy. A variety of management practices and design features would minimize the possibility of significant releases of harmful substances to groundwater. Refer to Section 3.9.6.2.

Policy	Consistency Analysis
GOAL OS-C To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.	
OS-C.1 Uses Incompatible with Mining The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.	The Project is consistent with this policy. Land uses in the vicinity of the Project site are agricultural and are designated Agriculture or Open Space, with an MRZ overlay. Mining is an approved use subject to the issuance of a CUP. The Project's development of a mining operation would not be an incompatible use.
OS-C.2 Mineral Resource Zones The County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2). (See Figures 7-9, 7-10, and 7-11 in Fresno County General Plan Background Report.)	The Project is consistent with this policy. The Project proposes the removal, processing, and off-site transport of an identified high quality mineral resource in an MRZ-2 designated area. Development of a mining operation involves mineral resource recovery, and is therefore compatible with the MRZ-2 designation.
OS-C.3 Surface Mine Operation The County shall require that the operation and reclamation of surface mines be consistent with the State Surface Mining and Reclamation Act (SMARA) and special zoning ordinance provisions.	The Project is consistent with this policy. As part of the Project application, the Project proponent has prepared a Reclamation Plan according to the requirements of SMARA. The Reclamation Plan and its implementation would be included in the conditions of approval for the Project. The Reclamation Plan requires that, once a specific phase has been completed, that phase would be reclaimed concurrently with the mining of the next phase. Reclamation would return the Project site to agriculture, and riparian and open water habitat.
OS-C.4 Mining Impacts The County shall impose conditions as necessary to minimize or eliminate the potential adverse impact of mining operations on surrounding properties.	The Project is consistent with this policy. Based on the analysis presented in this DEIR, mitigation measures have been recommended that would be adopted by the County. The County would also adopt conditions of approval as necessary for the Project's compliance with this policy.
OS-C.5 Surface Mine Reclamation The County shall require reclamation of all surface mines consistent with SMARA and the County's implementing ordinance.	The Project is consistent with this policy. As part of the Project application, the Project proponent has prepared a Reclamation Plan according to the requirements of SMARA. The Reclamation Plan and its implementation would be included in the conditions of approval for the Project. The Reclamation Plan requires that, once a specific phase has been completed, that phase would be reclaimed concurrently with the mining of the next phase. Reclamation would return the Project site to agriculture, and riparian and open water habitat.

Policy	Consistency Analysis
OS-C.6 Williamson Act on Mineral Deposits The County may accept California Land Conservation (Williamson Act) contracts on land identified by the State as containing significant mineral deposits subject to the use and acreage limitations established by the County.	The Project is consistent with this policy. The Project site contains 88 acres of land protected by existing Williamson Act contracts. Because mining operations would begin on parcels not currently subject to a Williamson Act contract, and would be phased so that mining operations would not start in new mining areas until a Williamson Act contract, or portion thereof, has expired, this impact was found to be less than significant. The Project is consistent with this policy.
OS-C.9 Mineral Resource Zone Compliance The County shall require that any proposed changes in land use within areas designated MRZ-2 along the San Joaquin and Kings Rivers comply with the provisions of the State Surface Mining and Reclamation Act (SMARA).	The Project is consistent with this policy. The Project site is located within an area designated MRZ-2. A Reclamation Plan intended to meet SMARA requirements has been prepared; the County would consider approval of this Reclamation Plan as part of the Project approval. With approval of the Reclamation Plan, the Project would be consistent with this policy.
OS-C.10 Mineral Resource Lands Protection The County shall not permit land uses that threaten the future availability of the mineral resource or preclude further extraction of those resources.	The Project is consistent with this policy. The Project is a mining Project that is located on agriculturally-zoned lands that permit mining subject to a CUP. The reclaimed land uses of agriculture and open space would not preclude further extraction of the Project site's remaining resources.
OS-C.11 Watershed-based Aggregate Mine Plan The County shall undertake a comprehensive, watershed-based planning effort to assess future extraction of the aggregate resources and recreation uses along the Kings River as a part of an update of the Kings River Regional Plan. Such a planning effort would help to facilitate use of the resource while protecting other Kings River watershed resources and functions, including floodplain areas.	The Project is consistent with this policy. Project implementation would not inhibit or prevent the County from conducting a planning effort related to updating the Kings River Regional Plan.
GOAL OS-E To help protect, restore, and enhance habitats in Fresno County that support fish and wildlife species so that populations are maintained at viable levels.	

Policy	Consistency Analysis
OS-E.1 Avoid Habitat Loss The County shall support efforts to avoid the “net” loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the USFWS and the CDFG to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.	The Project is consistent with this policy. The Project site has been surveyed for sensitive habitats and special status species. Areas of the Project site containing natural vegetation potentially serving as habitat are limited to riparian areas adjacent to the Kings River, and an approximately three-acre valley oak grove located on the boundary of Phases 5 and 9. Neither of these areas would be mined. Such lands would be preserved by the Project. Areas of the Project site that would be mined are limited to lands previously disturbed and used for agriculture; such areas do not offer important wildlife habitat as discussed in Section 3.4 of this DEIR.
OS-E.2 Construction Buffers The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both on-site habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the U.S. Fish and Wildlife Service and/or California Fish and Game.	The Project is consistent with this policy. The Project would incorporate buffer zones around excavations as follows: • All riparian habitats along the Kings River are preserved as a buffer; • 100 feet from the top of the Kings River bank or 50 feet from the Designated Floodway, or 50 feet from the dripline of riparian vegetation or mature oak tree, whichever is greater; • 100 feet from the public right-of-way; and • 25 feet from other property lines. Additionally, no stockpiled soil or material would be placed closer than 25 feet from any property boundary. With the incorporation of these buffers, the Project would avoid significant wildlife resources and is consistent with this policy. Refer to Section 3.4 of this DEIR.
OS-E.3 Wildlife Habitat Protection The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the value of the habitat for wildlife is maintained.	The Project is consistent with this policy. See OS-E.2 above.

Policy	Consistency Analysis
OS-E.6 Habitat Corridors The County shall ensure the conservation of large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife populations, as long as this preservation does not threaten the economic well-being of the County.	The Project is consistent with this policy. Areas of the Project site that would be mined are currently and have historically been in agricultural production, and have been subject to significant and routine surface disturbing activities as a result. An approximately three-acre valley oak grove is located on the boundary of Phases 5 and 9. This area would not be mined; rather it would be preserved. No other native habitat exists within the areas of the Project site that would be mined. Natural vegetation located within the Project site would be preserved and excluded from the areas of the Project site that would be mined. Refer to Section 3.4 of this DEIR.
OS-E.9 Biological Resource Evaluation Prior to approval of discretionary development permits, the County shall require, as part of any required environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special-status plants or animals. Such evaluation will consider the potential for significant impact on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.	The Project is consistent with this policy. Field surveys and analyses were completed to identify the potential impacts to biological resources. These were conducted according to professional standards, consistent with the requirements of CEQA, and proposed approval procedures established by the County as discussed in Section 3.4 of this DEIR.
OS-E.12 Water Habitat Protection The County shall ensure the protection of fish and wildlife habitats from environmentally-degrading effluents originating from mining and construction activities that are adjacent to aquatic habitats.	The Project is consistent with this policy. The Project has been designed to avoid all riparian habitat and natural vegetation along the Kings River. Additionally, there would be setbacks of 100 feet from the top of the Kings River bank, 50 feet from the Designated Floodway, or 50 feet from the dripline of riparian vegetation or mature oak trees, (whichever is greater). Refer to Section 3.4 of this DEIR.
OS-E.13 Habitat Protection The County should protect to the maximum extent practicable wetlands, riparian habitat, and meadows since they are recognized as essential habitats for birds and wildlife.	The Project is consistent with this policy. See OS-E.12
OS-E.16 High Value Fish and Wildlife Areas Areas that have unusually high value for fish and wildlife propagation should be preserved in a natural state to the maximum possible extent	The Project is consistent with this policy. See OS-E.12.
OS-E.17 Endangered Species Habitat The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with State and Federal endangered species laws.	The Project is consistent with this policy. See OS-E.1, OS-E.12, and OS-E.13 above.
GOAL OS-F To preserve and protect the valuable vegetation resources of Fresno County.	

Policy	Consistency Analysis
OS-F.1 Terrain and Vegetation Preservation The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides and ridges, and along important transportation corridors, consistent with fire hazard and property line clearing requirements.	The Project is consistent with this policy. The Project site is not located on a hillside or ridge, or along an important transportation corridor. See also OS-K.1 and OS-K.4 below.
OS-F.2 Compatible Species The County shall require developers to use native and compatible non-native plant species, especially drought-resistant species, to the extent possible, in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for project mitigation.	The Project is consistent with this policy. Reclamation of mined lands, as outlined in the Reclamation Plan, would return the Project site to agricultural production and open space. The Reclamation Plan provides for revegetation in accordance with Revegetation Guidelines developed for the Project, which includes the use of erosion control grasses and native riparian vegetation.
OS-F.3 Significant Natural Vegetation Areas The County shall support the preservation of significant areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.	The Project is consistent with this policy. Areas of the Project site that would be mined are limited to areas of existing agricultural operations, with areas of natural habitat being preserved in their current state. Reclamation would increase the amount of natural vegetation in the area, by reducing the footprint of agricultural uses.
OS-F.4 Landmark Trees The County shall ensure that landmark trees are preserved and protected whenever possible.	The Project is consistent with this policy. The Biological Resources Evaluation identified an approximately three-acre valley oak grove located on the boundary of Phases 5 and 9 that would be preserved and not mined.
OS-F.5 Rare, Threatened, and Endangered Species The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.	The Project is consistent with this policy. Biological surveys were conducted at the Project site (see Section 3.4 for a list of survey dates). The surveys assessed sensitive species, sensitive habitats, and other biological resource issues which might occur on or adjacent to the Project site. Areas of the Project site that would be mined have been used for agriculture production for decades, and contain no natural vegetation that could include rare, threatened, or endangered species.

Policy	Consistency Analysis
OS-F.7 Natural Topography The County shall require developers to take into account a site's natural topography with respect to the design and siting of all physical improvements in order to minimize grading.	The Project is consistent with this policy. The Project site is relatively flat, as a result of past and current agricultural activities. Project design would use setbacks, buffer zones, and berms to shield Project-related operations. Mining projects by nature require substantial movement of earth. With approval of the CUP and Reclamation Plan for this Project, the Project would comply with this policy.
OS-F.8 Vegetation for Wildlife The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches and on unused or marginal land for the benefit of wildlife.	The Project is consistent with this policy. The Project would preserve natural vegetation as a buffer along the Kings River, and additionally include setbacks and berms to minimize views of the Project site (see OS-E.2 above).
OS-F.10 Woodland Preservation The County shall require that new developments preserve natural woodlands to the maximum extent possible.	The Project is consistent with this policy. See OS-F.4 above, and OS-K.1 and OS-K.4 below.
GOAL OS-G To improve air quality and minimize the adverse effects of air pollution in Fresno County.	
OS-G.2 Air Quality Impact Assessment The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.	The Project is consistent with this policy. An Emission Inventory and Air Quality Impact Analysis Study and Health Risk Assessment were prepared for the Project. Refer to Section 3.3 of this DEIR.
GOAL OS-J To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment.	
OS-J.1 Sites Protection and Mitigation The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archaeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archaeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.	The Project is consistent with this policy. Based on the records search (Section 3.5.2.2) and field survey results (Section 3.5.2.3), the Project would not cause significant adverse impacts to known archaeological, paleontological, and cultural resources on the Project site. Mitigation measures are incorporated which reduce any impacts to unknown resources to below a level of significance. One archaeological site was located outside of the Project site and mitigation measures are incorporated which reduce any impacts to below a level of significance. Refer to Section 3.5 of this DEIR.
OS-J.2 Archeological Sites Confidentiality The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the location of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.	The Project is consistent with this policy. As part of the cultural resources study, archaeological resources were mapped. However, this DEIR does not present the location of these resources to protect confidentiality. Refer to Section 3.5 of this DEIR.

Policy	Consistency Analysis
OS-J.3 Native American Consultation The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.	The Project is consistent with this policy. Consultations with the Native American Heritage Commission (NAHC) and American Indian tribal representatives identified by the NAHC occurred as part of the cultural resources study. Refer to Section 3.5 of this DEIR.
OS-J.5 Landmark Designations The County shall support the registration by property owners and others of cultural resources in appropriate landmark designations (i.e., National Register of Historic Places, California Historic Landmarks, Points of Historical Interest, or Local Landmark).	The Project is consistent with this policy. See OS-J.2 and OS-J.3 above.
GOAL OS-K To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.	
OS-K.1 Scenic Resource Preservation The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas whenever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.	The Project is consistent with this policy. The Project is located on and within agricultural property, part of the dominant land use in the region. Views of the Project site from the Kings River and other areas in the vicinity would be limited by setbacks, preservation of all riparian areas adjacent to the Kings River, and vegetation berms. Mining on the Project site would not compromise scenic views of the area. The Project is consistent with this policy.
OS-K.2: The County shall identify and map significant scenic resources within the County and shall develop a program to manage these resources.	The Project is consistent with this policy. Significant scenic resources were identified and none were found in the Project viewshed as discussed in Section 3.1.6.
OS-K.3: The County should preserve areas of natural scenic beauty and provide for public access to scenic vistas by purchasing sites for park use.	The Project is consistent with this policy. There are no designated scenic resources or vistas located in the Project viewshed as discussed in Section 3.1.6
OS-K.4 Incorporating Scenic Features The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.	The Project is consistent with this policy. The Project site is adjacent to the Kings River. The Project proposes to protect all riparian habitat adjacent to the Kings River, in addition to minimum setbacks from the riverbank and riparian vegetation dripline. The Project is consistent with this policy.
OS-L.1: The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways.	The Project is consistent with this policy. There are no designated scenic highways or roads located adjacent to the Project as discussed in Section 3.1.6.
OS-L.3: The County shall manage the use of land adjacent to scenic drives and scenic highways...	The Project is consistent with this policy. There are no designated scenic highways or roads located adjacent to the Project as discussed in Section 3.1.6.
OS-L.4: The County shall require new development along designated scenic roadways within urban areas and unincorporated communities to underground utility lines on and adjacent to the site of the development or, when this is infeasible, to contribute their fair share of funding for future undergrounding.	The Project is consistent with this policy. There are no designated scenic highways or roads located adjacent to the Project as discussed in Section 3.1.6.
Economic Development	

Policy	Consistency Analysis
ED-A.12 Higher-value Specialty Crops The County shall support and encourage trends in agricultural production that shift suitable land into higher-value specialty crops that can support a more diverse processing sector with higher paying and more steady employment opportunities.	The Project is consistent with the policy. As discussed in Section 3.2.5, as a result of the Project, the reclaimed farmland will be of equal or higher quality due to the less stressed and rocky soil conditions.
ED-A.13 Agricultural Market Research Assistance The County shall assist agricultural agencies and marketing cooperatives to research global and domestic markets for high-value crops.	The Project is consistent with the policy. As discussed in Section 3.2.5, as a result of the Project, the reclaimed farmland will be of equal or higher quality due to the less stressed and rocky soil conditions.
ED-A.14 General Plan Implementation The County shall encourage and, where appropriate, assist the Economic Development Corporation to develop new markets for Fresno County farm produce.	The Project is consistent with the policy. As discussed in Section 3.2.5, as a result of the Project, the reclaimed farmland will be of equal or higher quality due to the less stressed and rocky soil conditions.
ED-A.15 Crop Shift Assistance The County shall support efforts of the UC Cooperative Extension, the Agricultural Commissioner, and other entities to provide technical assistance to farmers attempting to shift to higher-value crops.	The Project is consistent with the policy. As discussed in Section 3.2.5, as a result of the Project, the reclaimed farmland will be of equal or higher quality due to the less stressed and rocky soil conditions.
Health and Safety Element	
GOAL HS-B To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.	
HS-B.1 Fire Hazards Review The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.	The Project is consistent with this policy. The Hazards and Hazardous Materials Section of this DEIR outlines potential fire hazards associated with the Project. Analysis determined that the potential impacts would be less than significant and would not require any specific mitigation measures beyond regulatory compliance.
HS-B.6 Fire Risk Management Coordination The County shall work with local fire protection agencies, the California Department of Forestry and Fire Protection, and the U.S. Forest Service to promote the maintenance of existing fuel breaks and emergency access routes for effective fire suppression and in managing wildland fire hazards.	The Project is consistent with this policy. Beyond compliance with local fire control regulations, the Project is not subject to this County policy.
HS-B.8 Fire Agency Review of Development Proposals The County shall refer development proposals in the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety policies. If dual responsibility exists, both agencies shall review and comment relative to their area of responsibility. If policies are different or conflicting, the more stringent policies shall apply.	The Project is consistent with this policy. The Project proponent would coordinate with the County and local fire agencies as required by this policy.
GOAL HS-D To minimize the loss of life, injury, and property damage due to seismic and geologic hazards.	
HS-D.3 Soils and Geologic-seismic Analysis The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development in areas prone to geologic or seismic hazards.	The Project is consistent with this policy. A geotechnical review of the Project site was completed in support of this EIR (refer to Section 3.6 of this DEIR). The review found no significant risk related to seismic ground rupture or ground shaking, and recommended no mitigation measures related to these hazards.

Policy	Consistency Analysis
HS-D.4 Soils and Geologic-seismic Structure Design The County shall require all proposed structures, additions to structures, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with the applicable provision of the Uniform Building Code (Title 24 of the California Code of Regulations) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk to public safety.	The Project is consistent with this policy. See HS-D.3 above. The Project does not include structures to be inhabited or open to the public. All Project structures would be constructed in accordance with the applicable provision of the Uniform Building Code and other relevant professional standards.
HS-D.8 Soils Report The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development that requires a County permit and is located in an area containing soils with high “expansive” or “shrink-swell” properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.	The Project is consistent with this policy. The Project site is not located in an area containing soils with high expansive or shrink-swell properties. See HS-D.3 above.
Policy HS-D.9: The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.	The Project is consistent with this policy. As discussed in Section 3.6.5, the Project will use appropriate designs and BMPs to control erosion and mitigate the appearance of engineered slopes.
GOAL HS-E To minimize the exposure of the public to high noise levels and safety hazards through land use controls and policies for property in the vicinity of airports, and to limit urban encroachment around airports in order to preserve the safety of flight operations and the continued viability of airport facilities.	
HS-E.1 Airport Land Use Policy Plans The County shall review the Fresno County Airport Land Use Commission’s Airport Land Use Policy Plans (CLUPPs) to determine the appropriate land uses around airports. The county shall limit land uses in airport safety zones to those uses listed in the applicable CLUPPs as compatible uses. Exceptions shall be made only as provided for in the CLUPPs. Such uses shall also be regulated to ensure compatibility in terms of location, height, and noise.	The Project is consistent with this policy. The Project site is not within the vicinity of any airport, is not subject to any land use controls related to aviation uses, and is not subject to review by the Airport Land Use Commission.

Policy	Consistency Analysis
HS-E.2 Airport Safety Hazards The County shall ensure that new development, including public infrastructure projects, does not create safety hazards such as glare from direct or reflective sources, smoke, electrical interference, hazardous chemicals, or fuel storage in violation of adopted safety standards.	The Project is consistent with this policy. The design features presented in the Aesthetics Section of this DEIR address safety hazards associated with glare and reflective sources; the established mitigation reduces Project impacts to a less than significant level. The Project site is not located near an airport; therefore, hazardous materials associated with the Project construction and operations would not result in hazards to airport operations.
HS-E.3 Federal Airport Safety Zones The County shall ensure that development, including public infrastructure projects, within the airport approach and departure zones complies with Part 77 of the Federal Aviation Administration Regulations (Objects Affecting Navigable Airspace).	The Project is consistent with this policy. See HS-E.1 above.
GOAL HS-F To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.	
HS-F.1 Hazardous Materials Facilities The County shall require that facilities that handle hazardous materials or hazardous waste be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.	The Project is consistent with this policy. The Project would store and use fuels and other potentially hazardous materials. Therefore, the operator would be required to submit the appropriate documentation and plans as to how the Project would manage these materials (e.g. storage and use of gasoline, diesel fuel, and oil) for compliance with State and County regulations (refer to Section 3.8 of this DEIR).
HS-F.2 Hazardous Waste Applications The County shall require that applications for discretionary development projects that will use hazardous materials or generate hazardous waste in large quantities include detailed information concerning hazardous waste, reduction, recycling, and storage.	The Project is consistent with this policy. The Hazards and Hazardous Materials Section of this DEIR outlines the types of hazardous materials that the Project would use, and identifies the regulations the Project proponent would comply with. The proponent would need to provide the County with a hazardous materials safety and management plan. The plan would identify the type and amount of materials that would be present and show how they would be stored, used, and disposed of in compliance with regulations.
HS-F.7 Mining and Mineral Processing Standards The County shall ensure that the mining and processing of minerals in the County is conducted in compliance with applicable environmental protection policies.	The Project is consistent with this policy. The Hazards and Hazardous Materials Section of this DEIR provides a discussion of how the mining and processing of minerals would comply with applicable environmental protection policies.
GOAL HS-G To protect residential and other noise-sensitive uses from exposure to harmful or annoying noise levels; to identify maximum acceptable noise levels compatible with various land use designations; and to develop a policy framework necessary to achieve and maintain a healthful noise environment.	

Policy	Consistency Analysis
HS-G.1 Minimize Noise Impacts The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.	The Project is consistent with this policy. The Noise Section of this DEIR presents the analysis of the potential impacts of noise during construction and operation of the Project. Findings were that potentially significant noise impacts could occur during nighttime operations or when operating temporarily at night in response to an emergency. The Project would incorporate design elements and mitigation measures so that normal operations would not cause adverse noise impacts. Emergency events would be infrequent, and General Plan goals and objectives are not intended to apply to emergency situations. Therefore, the Project is considered to be consistent with this policy.
HS-G.4 Noise Mitigation Design and Acoustical Analysis So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environment review process where: a) Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are “generally unacceptable” or higher according to the Chart HS-1: “Land Use compatibility for Community Noise Environments;” b) Proposed projects are likely to produce noise levels exceeding the levels shown in the County’s Noise Control Ordinance at existing or planned noise-sensitive uses.	The Project is consistent with this policy. An acoustical analysis has been prepared for the Project and is provided as an appendix to this DEIR. Refer to Section 3.11 of this DEIR.
HS-G.5 Noise Mitigation Measures Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis on such measures upon site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The County shall consider the use of noise barriers, such as soundwalls, as a means of achieving the noise policies after other design-related noise mitigation measures have been evaluated or integrated into the project.	The Project is consistent with this policy. See HS-G.1 above
HS-G.6 Construction-related Noise The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County’s Noise Control ordinance.	The Project is consistent with this policy. See HS-G.1 and HS-G.4 above.
HS-G.8 Noise Levels Compatibility The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, “Land Use Compatibility for Community Noise Environments.”	The Project is consistent with this policy. The surrounding land uses of the Project site consist of farmland, rural residential development, and mining operations. The Noise Section of this DEIR discusses the potential noise impacts associated with the development of the Project. The Project is consistent with this policy.

Policy	Consistency Analysis
Public Facilities and Services Element	
GOAL PF-C To ensure the availability of an adequate and safe water supply for domestic and agricultural consumption.	
PF-C.3 Surface Water Use To reduce demand on the County's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.	The Project is consistent with this policy. Surface water will continue to be used for farmland irrigation. The Project would use groundwater sources; however, the impacts to groundwater would be less than significant. As shown in the Project's Water Supply Assessment (WSA), overall water use (as projected through 2035) would be lower with the Project than with a continuation of existing land uses (agriculture). The Project includes plans to recycle water to the extent feasible. Therefore, the Project complies with this policy. Refer to Section 3.9 of this DEIR.
PF-C.11 Ongoing Water Supply The County shall assure an on-going water supply to help sustain agriculture and accommodate future growth by allocation of resources necessary to carry out the water resources management programs.	The Project is consistent with this policy. The WSA prepared for the Project determined that water use with implementation of the Project would be lower than with a continuation of current agricultural uses. Therefore, the Project is consistent with this policy.

Policy	Consistency Analysis
PF-C.17 Water Supply Evaluation The County shall, prior to consideration of any discretionary project related to land use, undertake a water supply evaluation. The evaluation shall include the following: - A determination that the water supply is adequate to meet the highest demand that could be permitted on the lands in question. If surface water is proposed, it must come from a reliable source and the supply must be made “firm” by water banking or other suitable arrangement. If groundwater is proposed, a hydrogeologic investigation may be required to confirm the availability of water in amounts necessary to meet project demand. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required. - A determination of the impact that use of the proposed water supply will have on other water users in Fresno County. If use of surface water is proposed, its use must not have a significant negative impact on agriculture or other water users within Fresno County. If use of groundwater is proposed, a hydrogeologic investigation may be required. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required. Should the investigation determine that significant pumping-related physical impacts will extend beyond the boundary of the property in question, those impacts shall be mitigated. - A determination that the proposed water supply is sustainable or that there is an acceptable plan to achieve sustainability. The plan must be structured such that it is economically, environmentally, and technically feasible. In addition, its implementation must occur prior to long-term and/or irreversible physical impacts, or significant economic hardship, to surrounding water users.	The Project is consistent with this policy. An evaluation of water supply necessary for the Project’s operations has been prepared and is consistent with this policy. Refer to Section 3.9.
PF-C.25: Water Conservation Technologies The County shall require that all new development within the County use water conservation technologies, methods, and practices as established by the County.	The Project is consistent with this policy. The Project includes plans to conserve water including use of recycled water; therefore, the Project complies with this policy.
PF-C.26 Reclaimed Water The County shall encourage the use of reclaimed water where economically, environmentally, and technically feasible.	The Project is consistent with this policy. The Project would recycle water; therefore, the Project complies with this policy.

Policy	Consistency Analysis
GOAL PF-E To provide efficient, cost-effective, and environmentally-sound storm drainage and flood control facilities that protect both life and property and to divert and retain stormwater runoff for groundwater replenishment.	
PF-E.16 Minimal Sedimentation and Erosion The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of offroad vehicles. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.	The Project is consistent with this policy. The Project includes provision for the use of erosion control design facilities, such as stormwater basin-for the plant site, ditches, stream bank stabilization, and dikes, to control runoff and erosion so as to not impact the surrounding areas.
PF-E.20 Storm Water Drainage Discharges The County shall require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in floodwaters, flowing rivers, streams, creeks, or reservoirs waters.	The Project is consistent with this policy. See PF-E.16 above.
PF-E.21 Best Management Practices The County shall require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities, and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.	The Project is consistent with this policy. See PF-E.16 above.
TRANSPORTATION AND CIRCULATION ELEMENT	
GOAL TR-A To plan and provide a unified, coordinated, and cost-efficient countywide street and highway system that ensures the safe, orderly, and efficient movement of people and goods.	
TR-A.1 Roadway Design Standards The County shall plan and construct County maintained streets and roads according to the County's Roadway Design Standards. Roadway design standards for County-maintained roads shall be based on the American Association of State Highway and Transportation Officials (AASHTO) standards, and supplemented by California Department of Transportation (Caltrans) design standards and by County Department of Public Works & Planning Standards. County standards include typical cross sections by roadway classification, consistent with right-of-way widths summarized in Table TR-1.	The Project is consistent with this policy. The Traffic Impact Study Report prepared for the Project identified roadway and intersection improvements and fair share contributions necessary to mitigate the Project's traffic impacts.
The County may deviate from the adopted standards in circumstances where conditions warrant special treatment of the roadway. Typical circumstances where exceptions may be warranted may include: a. Extraordinary construction costs due to terrain, roadside development, or unusual right-of-way needs; and b. Environmental constraints that may otherwise entirely preclude road improvement.	

Policy	Consistency Analysis
Policy TR-A.2 Level of Service The County shall plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influences of the cities of Fresno and Clovis and LOS C on all other roadways in the County. Roadway improvements to increase capacity and maintain LOS policies should be planned and programmed based on consideration of the total overall needs of the roadway system, recognizing the priority of maintenance, rehabilitation, and operation of the existing road system. The County may, in programming capacity-increasing projects, allow exceptions to the LOS policies in this policy where it finds that the improvements or other measures required to achieve the LOS policy are unacceptable based on established criteria. In addition to consideration of the total overall needs of the roadway system, the County shall consider the following factors: (a) The right-of-way needs and the physical impacts on surrounding properties; (b) Construction and right-of-way acquisition costs; (c) The number of hours that the roadway would operate at conditions below the policy; (d) The ability of the required improvement to significantly reduce delay and improve traffic operations; and (e) Environmental impacts upon which the County may base findings to allow an exceedance of the standards. In no case shall the County plan for worse than LOS D on rural County roadways, worse than LOS E on Urban roadways within the spheres of influence of the cities of Fresno and Clovis, or in cooperation with Caltrans and the Council of Fresno County Governments, plan for worse than LOS E on State highways in the County.	The Project is consistent with this policy. The Traffic Impact Study Report prepared for the Project evaluated potential impacts on levels of service for roadways in the Project vicinity and improvements and fair share contributions necessary to mitigate the Project's traffic impacts.
Policy TR-A.3 Roadway Access The County shall require that new or modified access to property abutting a roadway and to intersection roads conform to access specifications in the Circulation Diagram and Policies section. Exceptions to the access policies may be permitted in the manner and form prescribed in the Fresno County Zoning and Subdivision Ordinances, provided that the designed safety and operational characteristics of the existing and planned roadway facility will be substantially diminished.	The Project is consistent with this policy. The Project does not include any new or modified access points that would conflict with County policies. Prior to construction of access points, County review would be required during which design details would be assessed for consistency with policies.

Policy	Consistency Analysis
Policy TR-A.4 Rights-of-Way Dedications: The County shall program road improvements on a countywide priority basis using technical assessment tools such as the Road and Traffic Evaluation (RATE) and Pavement Management System (PMS).	The Project is consistent with this policy. The Traffic Impact Report identified the Project's fair share contributions associated with road maintenance and improvements.
Policy TR-A.5 Rights-of-Way Dedications The County shall require dedication of right-of-way or dedication and construction of planned road facilities as a condition of land development, and require an analysis of impacts of traffic from all land development projects including impacts from truck traffic. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. The County may allow a project to fund a fair share of improvements that provide significant benefit to others through traffic impact fees.	The Project is consistent with this policy. The Traffic Impact Study Report prepared for the Project evaluated potential impacts on levels of service for roadways in the Project vicinity and improvements and fair share contributions necessary to mitigate the Project's traffic impacts.
Policy TR-A.6 Regional Transportation Plan: The County shall continue to participate with the Council of Fresno County Governments, Caltrans, and other agencies, to maintain a current Regional Transportation Plan, and to identify funding priorities and development expenditure plans for available regional transportation funds, in accordance with regional, State, and federal transportation planning and programming procedures. Such regional programming may include improvement to State highways, city streets, and County roadways.	The Project is consistent with this policy. The Traffic Impact Report identified the Project's fair share contributions associated with road LOS, congestion, safety, maintenance and improvements.
Policy TR-A.7 Development Impact Fees The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system.	The Project is consistent with this policy. The Traffic Impact Study Report prepared for the Project evaluated potential impacts on levels of service for roadways in the Project vicinity and identified fair share contributions necessary to mitigate the Project's traffic impacts.
Policy TR-A.8 Roadway Improvements The County shall ensure that land development that affects roadway use or operation or requires roadway access to plan, dedicate, and construct required improvements consistent with the criteria in the Circulation Diagram and Standards section of this element.	The Project is consistent with this policy. The Traffic Impact Study Report prepared for the Project evaluated potential impacts on levels of service for roadways in the Project vicinity and identified fair share contributions necessary to mitigate the Project's traffic impacts.

Policy	Consistency Analysis
Policy TR-A.10 Financial Assistance: The County shall actively seek all possible financial assistance, including grant funds available for regional, State, and federal agencies for street and highway purposes when compatible with General Plan policies and long-term local funding capabilities.	The Project is consistent with this policy. The Traffic Impact Report identified the Project's fair share contributions associated with road LOS, congestion, safety, maintenance and improvements.
TR-A.12 Multi-Modal: The County, where appropriate, shall coordinate the multi-modal use of streets and highways to ensure their maximum efficiency and shall consider the need for transit, bikeway, and recreational trail facilities when establishing the Ultimate Right-of-way Plan and Precise Plans of streets and highways.	The Project is consistent with this policy. The Traffic Impact Study Report prepared for the Project evaluated potential impacts on levels of service for roadways in the Project vicinity, addressed bikeway and recreational trail facilities, and identified fair share contributions necessary to mitigate the Project's traffic impacts
Policy TR-A.19 Future Rights-of-Way The County may identify locations of needed future road rights-of-way, consistent with adopted functional classifications, through development and adoption of specific plan lines where appropriate. Circumstances where specific plan line development may be considered may include the following: a) Where major classified roadways or corridors are expected to require additional through lanes within a 20-year planning horizon; b) Where the future alignment is expected to deviate from the existing alignment, or to be developed asymmetrically about the existing section or center line; c) Where the adjacent properties are substantially undeveloped, so that property owners may benefit from prior knowledge of the location of rights-of-way of planned roadways before construction improvements or developing property in a way which may ultimately conflict with identified transportation needs; and d) Expressways and associated frontage roads.	The Project is consistent with this policy. The Traffic Impact Study Report prepared for the Project evaluated potential impacts on levels of service for roadways in the Project vicinity and identified fair share contributions necessary to mitigate the Project's traffic impacts. In the event that right-of-way dedication is necessary to implement the roadway improvements identified in Traffic Impact Study Report, this requirement would be determined by the County and would be identified as a condition of approval. These requirements would ensure the Project's consistency with Policy TR-A.19.
Goal TR-C: To reduce travel demand on the County's roadway system and maximize the operating efficiency of transportation facilities so as to reduce the quantity of motor vehicle emissions and reduce the amount of investment required in new or expanded facilities	
Policy TR-C.1: The County shall support all standards and regulations adopted by the SJVUAPCD governing Transportation Control Measures (TCMs).	The Project is consistent with this policy. The Project would be in compliance with the SVUAPCD standards and regulations.

Policy	Consistency Analysis
Policy TR-C.2: The County shall consider Transportation System Management (TSM) measures to increase the capacity of existing roadway network prior to constructing new traffic lanes. Such measures may include traffic signal synchronization and additional turning lanes.	The Project is consistent with this policy. The Traffic Impact Study Report prepared for the Project evaluated potential impacts on levels of service for roadways in the Project vicinity and identified fair share contributions necessary to mitigate the Project's traffic impacts. In the event that right-of-way dedication is necessary to implement the roadway improvements identified in Traffic Impact Study Report, this requirement would be determined by the County and would be identified as a condition of approval
Policy TR-C-3: The County shall work with the cities of Fresno and Clovis to encourage new urban development within the Fresno-Clovis Metropolitan Area (FCMA) to provide appropriate on-site facilities that encourage employees to use alternative transportation modes as air quality and transportation mitigation measures. The type of facilities may include bicycle parking, shower and lockers, as well as convenient access to transit, depending on the development size and location.	The Project is consistent with this policy. The Project would encourage employees to use alternative transportation modes.
GOAL TR-D To plan and provide a safe, continuous, and easily accessible bikeway system that facilitates the use of the bicycle as a viable alternative transportation mode and as a form of recreation and exercise.	
Policy TR-D.5 Rights-of-Way Dedications The County shall require that adequate rights-of-way or easements are provided for designated bikeways or trails as a condition of land development.	The Project is consistent with this policy. In the event that right-of-way dedication for future bike lanes is determined to be necessary by the County, this requirement would be identified as a condition of approval.

Table 3.10-4. Kings River Regional Plan Consistency Analysis

Objective 2.00e: Provide for the conservation, utilization, and development of mineral resources in the Kings River area while minimizing the impact of mineral extraction activities on the natural environment.

Policy 4.05 Recovery of Mineral Resources The recovery of mineral resources in all zone districts will occur under the appropriate locational and operational standards specified in the Mineral Resources Unit of the Open Space/Conservation Element of the Fresno County General Plan.	The Project is consistent with this policy. Refer to the Open Space and Conservation policies in Table 3.10-3 above.
Policy 8.01 Sand and Gravel Location Criteria Sand and gravel operations should be encouraged in appropriate locations and should meet all Standards of Section 306-06 (Mineral Resources) of the General Plan.	The Project is consistent with this policy. Refer to Policy OS-C.2 in Table 3.10-3 above.

A NOP comment stated that the Kings River Regional Plan (KRRP) and Fresno County General Plan (FCGP) require updating since those current plans do not provide appropriate guidelines to address the

amount of mining activities in the area. As outlined in Table 3.10-3, the KRRP and FCGP both contain numerous policies specifically addressing mining (See Land Use Policies LU-C.4, LU-C.5; Open Space and Conservation Policies OSC-C.2, OSC-C.3, OSC-C.4, OSC-C.5, OSC-C.9; Health and Safety Policies HS-F.7; KRRP Policies 4.05, 8.01.). Nonetheless, determining the need for an update of the KRRP or the FCGP is beyond the scope of analysis necessary for the environmental review of the Project. Mining activities are not specifically identified in the Zoning Code's description of uses permitted, conditionally permitted, or prohibited in the AL zone. However, Section 858 of the Zoning Ordinance allows for conditional approval of surface mining operations, including ancillary activities, in any zone in the County. Additionally, Fresno County's goal is to conserve areas identified as containing significant mineral deposits for potential future mining use, while promoting the reasonable, safe, and orderly operation of mining extraction activities within areas designated for such use. The Proposed Project and its corresponding Reclamation Plan are in compliance with SMARA and Section 858 of the Fresno County Zoning Ordinance, and conditions to minimize adverse impacts of the mining operations to surrounding properties are incorporated into the Project Description and included as Mitigation Measures within this DEIR.

As discussed above and identified in Table 3.10-3 and 3.10-4, the Project is consistent with all applicable plans, policies, and zoning ordinances applicable to the Project. Therefore, the Project is considered to have a less than significant impact on land use and planning.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable

3.10.7 Cumulative-Level Impacts and Mitigation Measures

The geographic context for land use issues includes Fresno County at full build-out of the General Plan.

As discussed in Section 3.10.6.1, CEQA Guidelines Thresholds a) and c) were determined to have no impact and therefore further evaluation is not considered necessary. The potential cumulative impacts associated with CEQA Threshold b) are discussed below.

Would the Project, when viewed in conjunction with other cumulative projects, conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted

for the purpose of avoiding or mitigating an environmental effect? (CEQA Guidelines Threshold Criteria (b))

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. Therefore, overall cumulative impacts associated with land use are considered less than significant.

Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. It is also assumed that, if they are approved, these projects will be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with land use are considered less than significant.

It is anticipated that county-wide growth has been or will be reviewed for consistency with the County's General Plan, Kings River Regional Plan and zoning ordinances. These regulations require findings of plan and policy consistency prior to approval of entitlements of developments. Because these plans, policies and zoning ordinances take into consideration county-wide growth, consistency with these requirements demonstrate that the Project would not make a cumulatively considerable contribution to this impact, and the Project's cumulative impact to land use and planning is considered to be less than significant.

3.10.8 Alternatives to Significant Effects

No Project Alternative

Since the Project would be consistent with the County and Kings River Regional Plans, this alternative would not reduce potential impacts related to the land use and planning. This alternative would result in the significant loss of important mineral resources known to occur in an area classified as a MRZ-2 zone. Therefore, the No Project Alternative's impacts would be greater than the Project regarding the County's vision statement to protect and promote the careful management of the County's natural resources such as mineral resources. The No Project Alternative would eliminate the recovery of a known valuable resource.

Reduced Annual Production Alternative

This alternative would evaluate the potential impacts from artificially limiting the proposed production by a given amount. This alternative would not result in any changes that would impact land use and planning; therefore, it would not reduce potential impacts associated with the Project.

Reduced Project Size Alternative

This alternative would evaluate the potential impacts from artificially reducing the Project footprint by some stated amount. This alternative would not result in any changes that would impact land use and planning; therefore, it would not reduce potential impacts associated with the Project.

Reduced Mining Depth Alternative

This alternative would evaluate the potential impacts from artificially reducing the mining depth by some stated amount. This alternative would not result in any changes that would impact land use and planning; therefore, it would not reduce potential impacts associated with the Project.

Different Phasing Alternative

This alternative would evaluate the potential impacts from revising the phasing plan. This alternative would not result in any changes that would impact land use and planning; therefore, it would not reduce potential impacts associated with the Project.

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3.11 NOISE

3.11.1 Introduction

This section of the DEIR discusses the noise environment that currently exists on and in the vicinity of the Project site and the potential noise impacts that could result from implementing the proposed Project. Analysis in this section is based on the Guidelines for the Implementation of the California Environmental Quality Act (CCR §15000 et seq), Fresno County's Procedures for the Implementation of the California Environmental Quality Act, October 2007, the Environmental Noise Assessment (Bollard Acoustical Consultants, Inc., 2014a), Addendum to Environmental Noise Assessment (Bollard Acoustical Consultants, Inc., 2014b) and stakeholder comments received during scoping of the EIR.

3.11.1.1 Characteristics of Noise

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second) they can be heard by the human ear and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in decibel levels correspond closely to human perception of relative loudness as presented in Table 3.11-1.

The perceived loudness of sound is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels. The following table provides typical noise sources.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}) over a given time period (usually one hour). The L_{eq} is the foundation of the Day-Night Average Level noise descriptor, L_{dn} , and shows very good correlation with community response to noise.

Table 3.11-1. Typical A-Weighted Sound Levels of Common Noise Sources

Loudness Ratio	dBA	Description
128	130	Threshold of Pain
64	120	Jet aircraft Take-Off at 100 feet
32	110	Riveting Machine at Operators Position
16	100	Shotgun at 200 feet
8	90	Bulldozer at 50 feet
4	80	Diesel Locomotive at 300 feet
2	70	Commercial Jet Aircraft Interior During Flight
1	60	Normal Conversation Speech at 5-10 feet
0.5	50	Open Office Background Level
0.25	40	Background Level Within a Residence
0.125	30	Soft Whisper at 2 feet
0.0625	20	Interior of Recording Studio

Source: Environmental Noise Assessment, Bollard Acoustical Consultants, April 2014.

The Day-Night Average Level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. L_{dn} based noise standards are commonly used to assess noise impacts associated with traffic, railroad and aircraft noise sources.

3.11.1.2 Characteristics of Groundborne Vibration

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, while vibration is usually associated with transmission through a structure. As with noise, vibration consists of an amplitude and frequency. A person's response to vibration depends on their individual sensitivity as well as the amplitude and frequency of the source.

Vibration can be described in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities (inches/second). Standards pertaining to perception as well as damage to structures have been developed for vibration in terms of peak particle velocity. Although aggregate mining and processing vibration levels are not expected to be significant for this Project due to the relatively large distances between Project equipment (sources) and acoustically sensitive receivers, and the fact that no blasting would occur with this Project, an assessment of mining-related vibration levels is nonetheless addressed.

According to the Transportation and Construction-Induced Vibration Guidance Manual (CalTrans, 2004), operation of construction equipment and construction techniques generate ground vibration. Traffic traveling on roadways can also be a source of such vibration. At high enough amplitudes, ground

vibration has the potential to damage structures and/or cause cosmetic damage (e.g., crack plaster). Ground vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. Traffic, including heavy trucks traveling on a highway, rarely generates vibration amplitudes high enough to cause structural or cosmetic damage.

As vibrations travel outward from the source, they excite the particles of rock and soil through which they pass and cause them to oscillate by a few ten-thousandths to a few thousandths of an inch. Differences in subsurface geologic conditions and distance from the source of vibration would result in different vibration levels characterized by different frequencies and intensities. In all cases, vibration amplitudes would decrease with increasing distance. The maximum rate or velocity of particle movement is the commonly accepted descriptor of the vibration “strength.” This is referred to as the peak particle velocity (ppv) and is typically measured in inches per second.

Human response to vibration is difficult to quantify. Vibration can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does frequency. Generally, as the duration and vibration frequency increase, the potential for adverse human response increases.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-2 indicates that the threshold for damage to structures ranges from 2 to 6 in/sec peak particle velocity (ppv). One-half this minimum threshold, or 1 in/sec ppv is considered a criterion that would protect against significant architectural or structural damage. The general threshold at which human annoyance could occur is noted as one tenth of that level, or 0.1 in/sec ppv.

Table 3.11-2. General Human and Structural Responses to Vibration Levels

Effects on Structures and People	Peak Vibration Threshold (in./sec. ppv)
Structural damage to commercial structures	6
Structural damage to residential structures	2
Architectural damage to structures (cracking, etc.)	1
General threshold of human annoyance	0.1
General threshold of human perception	0.01

Source: Environmental Noise Assessment, Bollard Acoustical Consultants, April 2014.

3.11.2 Environmental Setting

3.11.2.1 Regional Setting

The Project site is located within unincorporated Fresno County in the easterly portion of the San Joaquin Valley and is characterized by agricultural land uses and urban centers. Noise sources in the region are typically associated with agricultural production, urban activity associated with the cities of Sanger and Reedley, and occasional aircraft over-flights.

3.11.2.2 Local Setting

The existing noise environment on the Project site is associated with agricultural production and vehicular noise from adjacent roadways.

Noise Environment at Nearby Receivers

The existing ambient noise environment experienced by residential receivers closest to the Project site is consistent with that of typical rural areas and consists primarily of natural sounds, (wind, birds, insects, etc.), local roadway traffic, and agricultural operations.

To quantify the existing ambient noise environment at residential receivers, (3) short-term and (3) long-term ambient noise level measurements were conducted at the 6 locations shown on Figure 3.11-1 on October 26 and 27, 2011.

The measurement locations were selected to be generally representative of existing ambient conditions at the nearest noise-sensitive land uses (residences) to the Project site. Measurements at these closest receivers conservatively account for potentially-affected receivers at locations farther from the Project noise sources. Table 3.11-3 lists the existing noise levels at each receiver.

Short term (i.e. an hour or less) measurements are representative of conditions at that location during the time of day that the measurement is taken. Short term measurements are typically collected during a peak traffic hour to be representative of the maximum noise level at a location. Long term (i.e. 24 hour) measurements consist of daytime and nighttime hours revealing average and maximum hourly noise levels. The maximum hour L_{50} from long term measurements during the day and night periods are used to evaluate Project noise impacts. A complete listing and graphical representation of ambient noise levels are presented in Appendix J.

Noise Environment Along Nearby Roadways

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD 77 108) was used to describe existing noise levels at receivers located along Project haul routes as discussed in Section 3.11.5.4. Table 3.11-4 shows the predicted existing traffic noise levels in terms of L_{dn} at a reference distance of 100 feet from the centerlines of existing Project-area roadways. This is considered to be the baseline condition. A listing of the FHWA Model input data for existing conditions is provided in Appendix J.

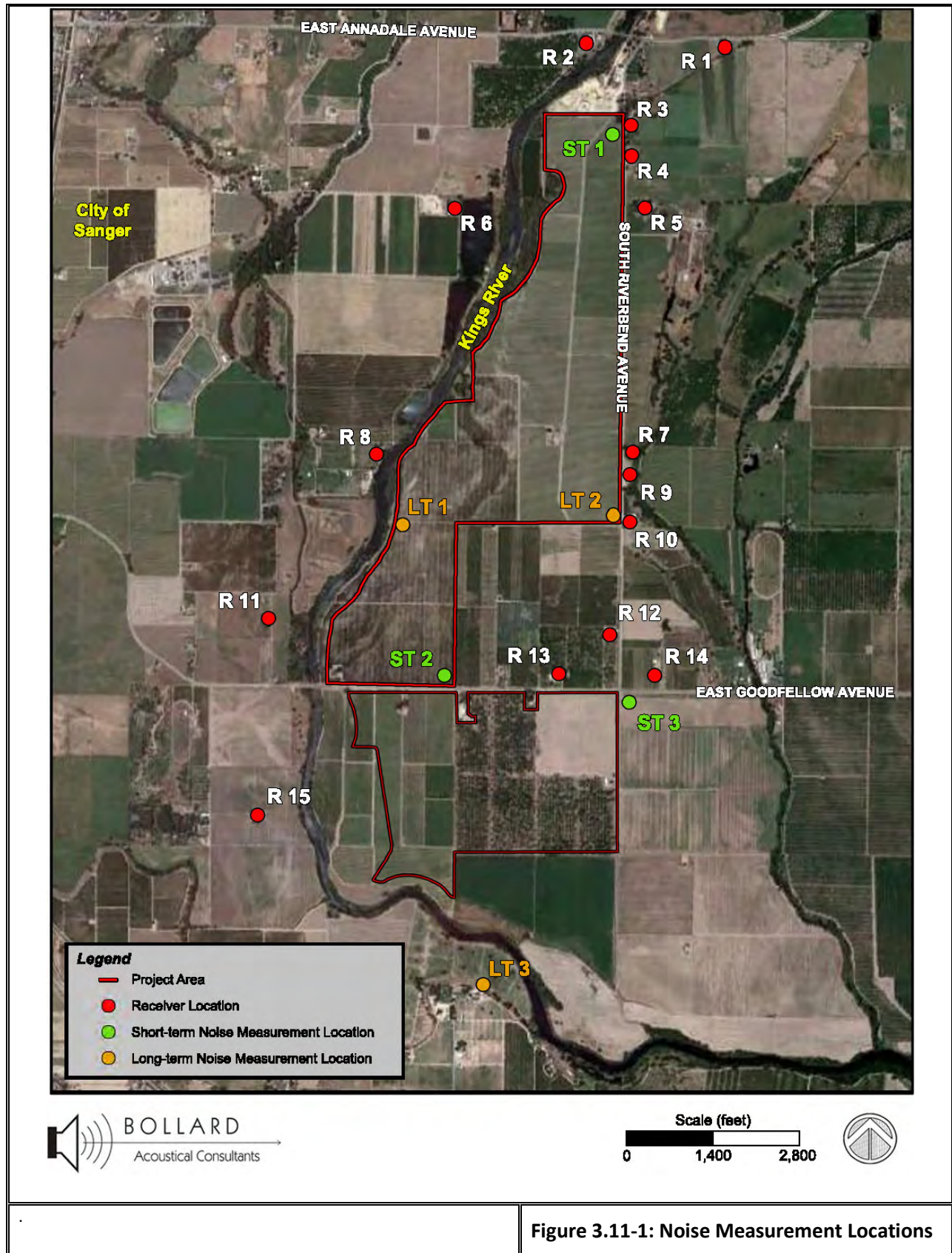


Table 3.11-3. Existing Noise Levels

Receiver	Related Noise Measurement Site	Ambient Max. Hour (day) (L ₅₀ , dB)	Ambient Max. Hour (night) (L ₅₀ , dB)	Ambient (day-night) (L _{dn} , dB)
1	ST 1 / LT 2	39 / 49.9	46.9	60.7
2	ST 1 / LT 2	39 / 49.9	46.9	60.7
3	ST 1 / LT 2	39 / 49.9	46.9	60.7
4	ST 1 / LT 2	39 / 49.9	46.9	60.7
5	ST 1 / LT 2	39 / 49.9	46.9	60.7
6	LT 1	43.6	41.8	47.8
7	LT 2	49.9	46.9	60.7
8	LT 1	43.6	41.8	47.8
9	LT 2	49.9	46.9	60.7
10	LT 2	49.9	46.9	60.7
11	LT 1	43.6	41.8	47.8
12	LT 2	49.9	46.9	60.7
13	LT 2	49.9	46.9	60.7
14	ST 3 / LT 2	49 / 49.9	46.9	60.7
15	LT 3	46.8	46.5	65.3

Source: Environmental Noise Assessment, Bollard Acoustical Consultants, April 2014.

Notes: All values are in units dBA. Daytime is 7:00 a.m. to 10:00 p.m. and Nighttime is 10:00 p.m. to 7:00 a.m.

Short-term noise measurements not used because the long term dataset is more complete and representative as it represents both daytime and night-time hours.

Table 3.11-4. Existing Traffic Noise Along Nearby Roadways

Roadway	From	To	L _{dn} , dB @ 100 Feet
McCall Avenue	Jensen Avenue	SR-180	63
McCall Avenue	North Avenue	Jensen Avenue	62
McCall Avenue	Central Avenue	North Avenue	60
Central Avenue	SR-99 SB Ramp	SR-99 NB Ramp	63
Central Avenue	Chestnut Avenue	SR-99 NB Ramp	64
Central Avenue	Golden State Boulevard	Chestnut Avenue	62
Central Avenue	Willow Avenue	Golden State Boulevard	62
Central Avenue	Clovis Avenue	Willow Avenue	60
Central Avenue	Temperance Avenue	Clovis Avenue	58
Central Avenue	McCall Avenue	Temperance Avenue	57
Central Avenue	Bethel Avenue	McCall Avenue	58
Central Avenue	Academy Avenue	Bethel Avenue	60
Central Avenue	Newmark Avenue	Academy Avenue	59
Central Avenue	Riverbend Avenue	Newmark Avenue	58

Source: Environmental Noise Assessment, Bollard Acoustical Consultants, April 2014.

Vibration Environment

The existing ambient vibration environment in the immediate Project vicinity is extremely low, as would be expected in a rural area with no appreciable sources of local vibration. Baseline vibration levels around the Project perimeter are less than the threshold of perception.

3.11.3 Regulatory Setting

Each level of government has some responsibility for reducing annoyances caused by noise. Each is discussed below.

3.11.3.1 Federal

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce.
- Assisting state and local abatement efforts.
- Promoting noise education and research.

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumes a significant role in noise control through its various operating agencies.

The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the federal Urban Mass Transit Administration (UMTA), while freeways that are part of the interstate highway system are regulated by the FHWA. Finally, the federal government actively advocates that local jurisdictions use their regulatory land use authority to arrange new developments in such a way that “noise sensitive” uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the Federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the County is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

3.11.3.2 State

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regulatory tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix,” which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

Article 4 of the California Administrative Code (California Noise Insulation Standards, Title 24, Chapter 1) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) and provides an annual average noise level of no more than 45 dBA CNEL (community noise equivalent level). When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold.

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

3.11.3.3 Local

General Plan

The Project site is located in Fresno County, which has both a Noise Element and a Noise Ordinance. The applicable General Plan Health and Safety Element noise-related goals and policies are provided in Table 3.11-5. In addition, the General Plan contains the Land Use Compatibility Chart presented in Figure 3.11-2.

Noise Ordinance

For residential uses affected by non-transportation (stationary or operational) noise sources (i.e., on-site aggregate extraction and processing), Section 8.40.040 (Exterior Noise Standards) of the County Code (Noise Ordinance) establishes performance standards as presented in Table 3.11-6. For this Project, the evaluation period is considered to be the worst-case hours during which on-site equipment would be operating, including maximum truck traffic operations. Due to the nature of Project-related noise sources, it is expected that the L_{50} criteria is the most restrictive. In the event the measured ambient noise level exceeds the applicable noise level standard in any category shown in Table 3.11-6, the applicable standard shall be adjusted per Section 8.40.040(b) of the Fresno County Noise Ordinance so as to equal the ambient noise level. Each of the noise level standards specified in Table 3.11-6 shall be reduced by 5 dB(A) for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises, per Section 8.40.040(c) of the Noise Ordinance.

Table 3.11-5. Fresno County Noise Element Goals and Policies

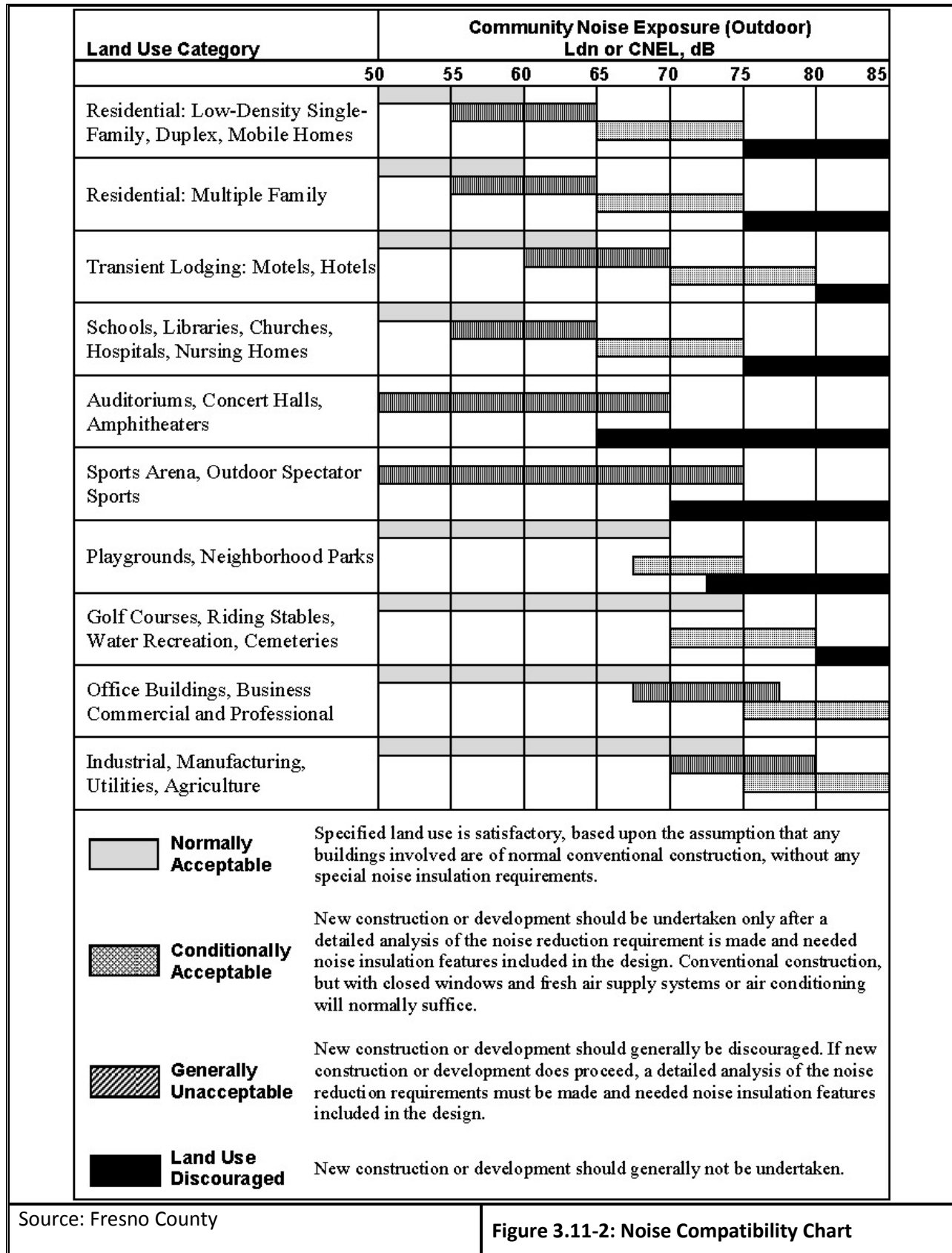
GOAL HS-G To protect residential and other noise-sensitive uses from exposure to harmful or annoying noise levels; to identify maximum acceptable noise levels compatible with various land use designations; and to develop a policy framework necessary to achieve and maintain a healthful noise environment.	
HS-G.1 Minimize Noise Impacts	The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.
HS-G.4 Noise Mitigation Design and Acoustical Analysis	So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environment review process where: Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are “generally unacceptable” or higher according to the Chart HS-1: “Land Use compatibility for Community Noise Environments;” Proposed projects are likely to produce noise levels exceeding the levels shown in the County’s Noise Control Ordinance at existing or planned noise-sensitive uses.
HS-G.5 Noise Mitigation Measures	Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis on such measures upon site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The county shall consider the use of noise barriers, such as soundwalls, as a means of achieving the noise policies after other design-related noise mitigation measures have been evaluated or integrated into the project.
HS-G.6 Construction-related Noise	The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County’s Noise Control ordinance.
HS-G.8 Noise Levels Compatibility	The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, “Land Use Compatibility for Community Noise Environments.”

Source: Environmental Noise Assessment, Bollard Acoustical Consultants, April 2014.

Table 3.11-6. Fresno County Exterior Noise Ordinance Standards

Duration Exceeded (Minutes)	Statistical Descriptor	Day Noise Level (dB)	Night Noise Level (dB)
30	L ₅₀	50	45
15	L ₂₅	55	50
5	L ₈	60	55
1	L ₂	65	60
any	L _{max}	70	65

Source: Environmental Noise Assessment, Bollard Acoustical Consultants, April 2014.



Section 8.40.050 (Interior Noise Standards) of the County Code (Noise Ordinance) establishes performance standards which are essentially 15 dB lower than the County's exterior day noise level standards, and 20 dB lower than the County's exterior nighttime noise level standards. Standard residential construction provides approximately 15 dB noise reduction with windows open and at least 25 dB with windows closed. Therefore, satisfaction with the County's daytime *exterior* noise standard would ensure satisfaction with the County's daytime *interior* noise standard. During nighttime hours, meeting the County's *exterior* noise standard would ensure satisfaction with the County's *interior* noise standard, but only if residential windows are in the closed position.

Section 8.40.060 of the Fresno County Code states that noise sources associated with construction shall be exempt from the Table 3.11-6 standards, provided such activities do not take place before 6 a.m. or after 9 p.m. on any day except Saturday or Sunday, or before 7 a.m. or after 5 p.m. on Saturday or Sunday.

3.11.4 Significance Thresholds

3.11.4.1 Appendix G Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, the Project would have a significant effect on public health and safety if there is:

- a) *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.*
- b) *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.*
- c) *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.*
- d) *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.*
- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.*
- f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.*

3.11.4.2 Additional Thresholds of Significance

There are no additional thresholds of significance related to the topical environmental issue. However, there are criteria that are not regulatory standards which have been chosen to implement the thresholds of significance.

Vibration Increase Criteria

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-2 indicates that the threshold at which human annoyance could occur is 0.1 in/sec ppv. Thus, human exposure to vibration exceeding 0.1 in/sec ppv is considered to be a significant impact.

Noise Level Increase Criteria

In California, cities and counties are required to adopt a noise element as part of their general plan. Cities and counties can also adopt noise control requirements within their zoning ordinances or as a separate noise ordinance. The Project site is located in Fresno County, which has both a Noise Element and a Noise Ordinance. Applicable noise-level criteria for Fresno County are discussed below.

Many of the land uses located in the immediate Project vicinity are agriculturally zoned, and agricultural uses are not considered to be noise sensitive. However, for the purposes of assessing noise impacts for this Project, and to be conservative, residences located on agriculturally-designated properties are considered to be noise-sensitive. Even though a given residence is considered to be noise sensitive, the agriculturally zoned property is not. As such, noise impacts in this study are evaluated at the residences themselves where the noise sensitivity exists, rather than at the property line of the agriculturally designated parcel which, by virtue of both its zoning and expected use, is not considered to be noise sensitive. It is generally recognized that an increase of at least 3 dB for similar noise sources is required before most people would perceive a change in noise levels, and an increase of 6 dB is required before the change would be clearly noticeable.

The Federal Interagency Commission on Noise (FICON) has developed a graduated scale for use in the assessment of Project-related noise level increases. Table 3.11-7 was developed by FICON as a means of developing thresholds for impact identification for Project-related noise level increases. The rationale for the graduated scale is that test subject's reactions to increases in noise levels varied depending on the starting level of the noise. Specifically, with lower ambient noise environments, such as those below 60 dB L_{dn} , a larger increase in noise levels was required to achieve a negative reaction than was necessary in more elevated noise environments. Table 3.11-7 thresholds are consistent with those included in the Fresno County General Plan Health and Safety Element for new and realigned roadways.

Table 3.11-7. Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level (No Project), dB L _{dn}	Increase Required for Finding of Significance, dB
< 60	+5 Or More
60 – 65	+3 Or More
> 65	+1.5 Or More

Source: Environmental Noise Assessment, Bollard Acoustical Consultants, April 2014.

Based on the FICON research, a 5 dB increase in noise levels due to a Project is required for a finding of significant noise impact where ambient noise levels without the Project are less than 60 dB L_{dn}. Where pre-Project ambient conditions are between 60 and 65 dB L_{dn}, a 3 dB increase is applied as the standard of significance. Finally, in areas already exposed to higher noise levels – specifically pre-Project noise levels in excess of 65 dB L_{dn} – a 1.5 dB increase is considered by FICON as the threshold of significance by FICON.

According to the FICON study, if screening analysis shows that noise-sensitive areas will be at or above 65 dB DNL (Day-Night Level) and will have an increase of 1.5 dB DNL or more, further analysis should be conducted. The FICON study also reported that “every change in the noise environment does not necessarily impact public health and welfare.”

3.11.5 Methodology of Analysis

This analysis is based on assessing compliance with applicable Fresno County noise level standards and recommends feasible mitigation, as necessary, to ensure compliance with those standards as well as compliance with the significance thresholds identified above. In addition, vibration impacts are qualitatively evaluated.

3.11.5.1 Reference Noise Levels for Onsite Noise Sources

The major on-site noise sources identified for this Project include aggregate mining (heavy equipment operations in pit areas), the aggregate processing plant, the hot mix asphalt plant, the ready-mix concrete plant, on-site heavy truck traffic and the periodic use of the portable recycle plant. The predicted noise emissions of these various sources were quantified through noise-level measurements taken by Bollard Acoustical Consultants (BAC) in recent years at similar sand and gravel facilities, including the Vulcan Materials River Rock Facility located at 11599 Old Friant Road in Fresno, California, and Vulcan’s Sanger-Centerville Plant to the northeast of the Riverbend site. Offsets were applied to the reference noise levels where appropriate to reflect the proposed source-specific noise-control measures included in the Project design.

Table 3.11-8 shows the reference noise levels corresponding to the operation of the types of equipment that would be used at the Project site, including the aforementioned source-specific noise control measures (e.g. asphalt plant exhaust silencer, aggregate plant urethane sheets, smart backup alarms, etc.). Table 3.11-8 also shows the approximate distances to the 50 and 45 dB L₅₀ noise contours for each

on-site noise source, adjusted for source-specific noise control measures. The contour distances, however, do not account for shielding provided by proposed earthen berms, as that shielding is not uniform in all directions. The 50 and 45 dB L_{50} contours are identified in this analysis since these are the distances within which Project noise generation could potentially exceed the daytime and nighttime noise standards of Fresno County.

Table 3.11-8. Reference Noise Level Data and Predicted Noise Contours

Noise Source	L_{50} dB at 100-feet ¹	L_{max} dB at 100-feet ¹	Distance to 50 dB L_{50} Day (feet) ²	Distance to 50 dB L_{50} Night (feet) ²
Excavation – Dragline ³	70	80	1,400	2,200
Rock Processing Plant	75	90	1,400	2,200
Hot-Mix Asphalt Plant	74	80	1,300	2,000
Ready-Mix Concrete Plant	73	80	1,200	1,800
Recycle Plant (periodic) ⁴	73	85	1,200	1,800
On-site Truck Movements	55	73	200	300

¹ Average noise levels represent any 1-hour period and assume continuous operation of the noise sources.

² The locations of the noise contours were computed from the reference levels assuming standard spherical spreading loss (-6dB per doubling of distance) and a 1.5 dB reduction per 1,000 feet for atmospheric absorption and ground attenuation.

³ Excavation would occur at locations 15-20 feet below existing grade level using a Bucyrus 380-W electric dragline or equivalent. These reference levels assume the dragline cooling air exhaust vents would not face the nearest residences.

⁴ Estimated 250 hrs/yr annualized equivalent 0.8 hrs/day.

Source: Environmental Noise Assessment, Bollard Acoustical Consultants, April, 2014.

It should be noted that BAC was unable to locate noise level data for the Bucyrus 380 electric dragline (or equivalent) which is proposed for excavation following overburden removal. Noise level measurements of the much larger Bucyrus 680 electric dragline conducted by BAC resulted in a reference median noise level (L_{50}) of approximately 78 dB at a reference distance of 100 feet from the operating dragline. Because the Model 380 electric dragline is considerably smaller than the measured 680, noise emissions of the dragline proposed for use at the Riverbend excavation areas are predicted to be lower. Although specific noise data for the 380 could not be located, BAC estimates the median noise level generated by the proposed dragline would be approximately 75 dB L_{50} at a reference distance of 100 feet behind the dragline, with a maximum noise level of approximately 82 dB at that same distance.

The dragline noise emissions were observed to be approximately 5 dB lower in front of the dragline versus behind the dragline. This is because the cooling fan outlets, which are one of the loudest components of dragline operation, are located on the rear of the dragline. As noted above, the proposed operation of the dragline would be such that the exhaust vents would face away from the nearest residences as the dragline pivots, thereby reducing the reference noise level from the dragline to approximately 70 dB L_{50} . These levels should be verified once the electric dragline is in operation at the Riverbend Project site.

The Project site access route extends north-south between the processing plant area and East Goodfellow Avenue. While heavy trucks are on site, they would be subject to the Fresno County Noise Ordinance Standards shown in Table 3.11-6. Once Project heavy trucks leave the site and utilize public roadways, they would be subject to the criteria used to define significant traffic noise level increases at off-site residential locations.

To compute noise levels associated by on-site heavy truck traffic, the noise generation of typical aggregate trucks and the number of truck pass-bys occurring during any given hour must be known. BAC file data for both empty and loaded aggregate trucks indicate that a mean Sound Exposure Level (SEL) of 75 dBA per truck pass-by can be expected a reference distance of 100 feet from the pass-by route, with a maximum level of approximately 73 dB at that distance.

The Project would reportedly generate 144 heavy truck trips during the a.m. peak hour. Given that number of worst-case hourly pass-bys and a SEL of 75 dB, the reference hourly average noise level at 100 feet computes to 61 dBA. Median (L_{50}) levels would be even lower than average noise levels, or approximately 55 dB L_{50} .

3.11.5.2 Project Design Features that Reduce Noise

Consistent with General Plan Policy HS-G.1, the following elements of the Project have been designed to minimize adverse noise impacts on surrounding land uses:

- The HMA plant would be equipped with an exhaust stack silencer.
- The main aggregate plant would be equipped with urethane screens on the elevated screen decks and heavy urethane or rubberized liners on the hoppers and chutes.
- All mobile equipment would be equipped with noise suppressor mufflers in compliance with all applicable local, state, and federal laws and regulations.
- Smart backup alarms would be utilized and adjusted to ambient noise levels. Strobe lights would replace audible back-up alarms during non-daylight working hours subject to California Division of Occupational Safety and Health (Cal OSHA) and United States Department of Labor Mine, Safety and Health Administration (MSHA) approval.
- Electric dragline excavation operations within 1,000 feet of an existing residence would be conducted such that the dragline boom is facing the nearest residences, thereby providing greater separation between those residences and the dragline motors/fans, and orienting the cooling fan outlet (which is the loudest dragline noise source and located on the opposite side of the dragline than the boom) away from those residences.
- The reference sound levels associated with dragline operation would be verified through noise level measurements immediately upon commencement of dragline operations at the Project site. In the event that actual noise emissions of the dragline exceed the assumptions contained within this analysis, additional noise control measures shall be implemented. Those measures would include replacing fan motors with variable drive motors and/or installation of cooling air

inlet and/or exhaust silencers directly to the dragline as required to satisfy the Fresno County Noise Ordinance standards.

- A 10-foot tall berm would be constructed along Riverbend Avenue near the western edge of the proposed 100-foot excavation setback.
- A 10-foot tall vegetated berm would be constructed along the west boundary to attenuate noise and visually screen the Plant site from the Kings River and areas to the west of the Project site.
- An 8-foot tall berm would be constructed along the South side of Goodfellow from Riverbend Avenue to 2,000 feet West of Riverbend Avenue near the southern edge of the proposed 100-foot excavation setback.
- Recycle plant operation would be limited to daytime hours (7 a.m. to 10 p.m.).
- Following construction of berms along Riverbend and Goodfellow Avenues, to the maximum extent possible, excavation activities within 500 feet of an existing residence located adjacent to those roadways shall start on the portion of the pit furthest from the nearest residences, progressing below grade in the direction of those residences. In this way, mining activities may be visually and acoustically shielded as the mining equipment moves towards the potentially impacted residences.

3.11.5.3 Noise Level Prediction for Receivers Located Near the Project Site

Figure 2-7 in Section 2.0 illustrates the locations of the Plant area noise sources and Figure 3.11-1 shows nearby receptors. Noise levels were extrapolated from the reference noise levels shown in Table 3.11-8 to the nearest residences. A sound decay rate of six decibels per doubling of distance (-6 dB/DD) that accounts for spherical spreading between a point source and receiver was used to model sound propagation from on-site Project noise sources to the nearest receptors. An additional -1.5 dB per thousand feet was included in the computations to account for excess ground attenuation and atmospheric absorption.

The Project proposes to construct earthen berms at the three locations identified on Figures 2-7 and 2-9 in Section 2.0. Where the proposed berms are located between the Plant area noise sources (aggregate, asphalt, recycle, and ready-mix plants) and the receiver, a -5 dB insertion loss was applied to projected noise levels. For the proposed excavation operations, a more detailed noise barrier analysis was performed (Appendix J). Table 3.11-9 presents the noise reduction from berms applied to each receiver. Table 3.11-10 presents the distances between sources and receivers. Table 3.11-11 presents and totals the maximum noise from the plant area.

Table 3.11-9. Noise Reduction from Proposed Berms

Receiver	Plant Area Berms (L ₅₀ , dB)	Mine Berms (L ₅₀ , dB)
1	-5	-5
2	0	-5
3	-5	-9.3
4	-5	-9.3
5	-5	-8.9
6	0	-5
7	-5	-9.1
8	-5	-8.9
9	-5	-9.3
10	-5	-9.4
11	0	-5
12	0	-5
13	0	-8.2
14	0	-5
15	0	-5

Source: Environmental Noise Assessment, Bollard Acoustical Consultants, April 2014.

The Project noise impacts were calculated for the maximum operating schedule. The maximum operating schedule consists of the Project operating 24 hours per day and 7 days per week which may temporarily be required under certain circumstances. The maximum operating schedule would include all sources operating at night except the recycle plant, which is assumed to only operate during the day. Project noise impacts at receivers when the Project is operating under the maximum schedule are presented in Table 3.11-12. Cumulative noise impacts at receivers when the Project is operating under the maximum schedule are presented in Table 3.11-13.

Table 3.11-10. Distances from Noise Sources to Receivers

Receiver	Aggregates Plant (feet)	Asphalt Plant (feet)	Ready Mix Plant (feet)	Recycle Plant (feet)	Traffic (feet)	Mine (feet)
1	8,300	7,700	8,000	7,600	8,350	2,225
2	7,300	7,000	7,400	6,900	7,550	1,225
3	6,450	5,900	6,300	5900	6450	340
4	6,050	5,500	5,800	5500	6050	345
5	5,400	4,800	5,100	4800	5400	475
6	4,400	4,400	4,700	4,100	4,480	2,080
7	2,940	2,000	2,100	2300	2900	405
8	1,250	2,100	2,200	1900	1250	690
9	2,800	1,900	1,950	2300	2800	355
10	2,900	2,000	1,950	2300	2900	315
11	3,700	4,600	4,400	4300	3,000	1,120
12	3,500	3,000	2,700	3300	2,500	1,940
13	3,500	3,350	3,000	3,500	1700	525
14	4,500	4,100	3,800	4,300	3200	930
15	6,200	7,000	6,600	6700	3,900	1,600

Source: (Bollard, 4/2014).

Table 3.11-11. Plant Area Maximum Noise Levels

Receiver	Aggregates Plant (L ₅₀ , dB)	Asphalt Plant (L ₅₀ , dB)	Ready Mix Plant (L ₅₀ , dB)	Recycle Plant (L ₅₀ , dB)	Traffic (L ₅₀ , dB)	Plant Area (L ₅₀ , dB)
1	19	20	18	19	0	25
2	27	27	25	26	6	32
3	24	25	23	24	4	30
4	25	26	24	25	5	31
5	27	28	26	27	7	33
6	36	35	33	35	15	41
7	36	40	38	37	16	44
8	46-N	39	38	40	26	48-N
9	37	41	39	37	17	45
10	36	40	39	37	21	44
11	38	34	34	34	21	41
12	39	40	40	38	23	45
13	39	38	39	37	28	44
14	35	36	36	34	20	41
15	30	27	27	26	17	34

Notes: N = exceedences of 45 dB L₅₀ nighttime noise standard. D = exceedences of 50 dB L₅₀ daytime noise standard.

Source: (Bollard, 4/2014).

Table 3.11-12. Maximum Operating Scenario Project Noise Levels

Receiver	Plant Area (L ₅₀ , dB)	Mine (L ₅₀ , dB)	Project (L ₅₀ , dB)
1	25	35	35
2	32	41	41
3	30	50-N	50-N
4	31	50-N	50-N
5	33	47-N	47-N
6	41	36	42
7	44	48-N	49-N
8	48-N	43	49-N
9	45	49-N	50-N
10	44	50-N	51-D/N
11	41	42	47-N
12	45	36	45
13	44	47-N	49-N
14	41	44	46-N
15	34	39	40
Threshold			50-D / 45-N

Notes: D = Day, N=Night. Exceedences in **bold**.**Table 3.11-13. Maximum Operating Scenario Cumulative Noise Levels**

Receiver	Project (L ₅₀ , dB)	Ambient (d) (L ₅₀ , dB)	Ambient (n) (L ₅₀ , dB)	Cum. (d) (L ₅₀ , dB)	Cum. (n) (L ₅₀ , dB)
1	35	49.9	46.9	50	47
2	41	49.9	46.9	50	48
3	50	49.9	46.9	53	52
4	50	49.9	46.9	53	52
5	47	49.9	46.9	52	50
6	42	43.6	41.8	46	45
7	49	49.9	46.9	53	51
8	49	43.6	41.8	50	50
9	50	49.9	46.9	53	52
10	51	49.9	46.9	54	52
11	47	43.6	41.8	47	47
12	45	49.9	46.9	51	49
13	49	49.9	46.9	52	51
14	46	49.9	46.9	51	49
15	40	46.8	46.5	48	47
Threshold	50-D / 45-N	n/a	n/a	n/a	n/a

(d) = daytime (7 a.m. to 10 p.m.), (n) = nighttime (10 p.m. to 7 a.m.), Cum. = Cumulative

3.11.5.4 Noise Level Prediction for Receivers Located Along Off-Site Haul Routes

The FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to quantitatively assess traffic noise levels associated with traffic in the existing setting and for the Project. Traffic volumes for future (2015), future (2019) and future (2035) conditions without the Project were provided by VRPA Technologies, Inc. in the form of peak hour turning movements for non-Project traffic, and Average Daily Volumes for Project traffic. Average Daily Trips (ADTs) for non-Project traffic were computed by multiplying the peak hour volumes by a factor of ten (10). The Project's proposed truck usage distribution on the area roadways was also provided by VRPA Technologies, taking into account the planned annual material production. Predicted noise levels along public roadways are presented in Table 3.11-14.

Table 3.11-14. Noise Impacts along Public Roadways

Roadway	From	To	2015 L _{dn} at 100 Feet (Project Change)	2019 L _{dn} at 100 Feet (Project Change)	2035 L _{dn} at 100 Feet (Project Change)
McCall Avenue	SR-180	Jensen Avenue	64 (1)	65 (1)	67 (1)
McCall Avenue	Jensen Avenue	North Avenue	63 (1)	65 (2)	66 (1)
McCall Avenue	North Avenue	Central Avenue	61 (1)	64 (3)	65 (2)
Central Avenue	SR-99 NB Ramp	SR-99 SB Ramp	63 (0)	63 (0)	64 (0)
Central Avenue	SR-99 NB Ramp	Chestnut Avenue	64 (0)	64 (0)	65 (0)
Central Avenue	Chestnut Avenue	Golden State Boulevard	62 (0)	62 (0)	63 (0)
Central Avenue	Golden State Blvd	Willow Avenue	62 (0)	62 (0)	63 (0)
Central Avenue	Willow Avenue	Clovis Avenue	60 (0)	60 (0)	62 (0)
Central Avenue	Clovis Avenue	Temperance Avenue	58 (0)	59 (0)	61 (0)
Central Avenue	Temperance Avenue	McCall Avenue	57 (0)	58 (0)	60 (0)
Central Avenue	McCall Avenue	Bethel Avenue	60 (2)	63 (4)	63 (3)
Central Avenue	Bethel Avenue	Academy Avenue	61 (1)	63 (3)	64 (2)
Central Avenue	Academy Avenue	Newmark Avenue	61 (2)	63 (4)	64 (3)
Goodfellow Avenue	Newmark Avenue	Riverbend Avenue	60 (2)	63 (4)	64 (4)

Source: Environmental Noise Assessment, Bollard Acoustical Consultants, April, 2014.

Notes:

1. Bold cells represent potential Project noise impact. Impacts are identified where the Project would cause an increase in traffic noise levels of 5 dB or more where existing levels without the Project are below 60 dB L_{dn}, an increase of 3 dB where existing noise levels are between 60 and 65 dB L_{dn}, and 1.5 dB where existing noise levels exceed 65 dB L_{dn}. This explains why a 3 dB increase is potentially significant along some segments and less than significant along others.
2. Because this table shows traffic noise levels with the Project, the existing traffic noise level without the Project can be determined by subtracting the Project-related increase (the dB level in parentheses), from the noise levels shown to the immediate left.

3.11.5.5 Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

As discussed in previous sections, CMI currently operates the Kings River Sand and Gravel mining operation under CUP 3052 adjacent to the Project site to the east and southeast. Although preliminary in concept, future operators of CUP 3052 may be interested in an agreement with Riverbend to mine Phases 6A, 6B and 7 and process the excavated material at the CUP 3052 plant. If this agreement were to be made and CUP 3052 was amended to import material from Riverbend the materials from Phases 6A, 6B and 7 would still be excavated by an electric dragline following overburden removal by off-road equipment and transported to the CUP 3052 plant by electric conveyor. The CUP 3052 plant would continue to operate as it had in the past, except with materials excavated from the Riverbend site.

Once the Riverbend processing plant is in operation, both the CUP 3052 plant and the Riverbend plant would be operational. Both plants will continue to operate even if Phases 6A, 6B and 7 materials are processed at the CUP 3052 plant. Processing material from Phases 6A, 6B and 7 at the CUP 3052 plant would not increase production levels at the CUP 3052 plant because CUP 3052 limits production to one million tons/yr. The noise impacts related to the CUP 3052 were already analyzed in the EIR (SCH # 2004081114) certified for that project in 2008. The noise mitigation measures for CUP 3052 would remain in place (e.g. offer of the installation and payment of acoustical upgrades to residences within 1,600 feet). Therefore noise levels at CUP 3052 and the Riverbend processing plants and excavation would not change or increase due to processing Phases 6A, 6B and 7 materials at the CUP 3052 plant. Thus, the Project impacts conservatively analyzed in this Draft Environmental Impact Report represent both the conditions under the proposed Project and under a modified Project with processing Phases 6A, 6B and 7 materials at the CUP 3052 plant.

3.11.6 Project-Level Impacts and Mitigation Measures

3.11.6.1 Issues Found to Have No Impact

The following CEQA thresholds were evaluated and it was determined that the Project would have no impact and these potential effects do not need to be further considered.

b) Would the Project expose persons to or generate excessive groundborne vibration or groundborne noise levels?

The Project would not produce significant vibrations at receivers in the Project vicinity. This is due to the type of mining extraction equipment used at the site and the planned extraction methods (i.e., not blasting), combined with the distance from active mining areas and plant locations to the nearest off-site sensitive uses. Construction vibration levels resulting from equipment used in similar projects determined that groundborne vibration is not perceptible beyond 300 feet from a project site. The closest sensitive receiver is located farther than 300 feet at 340 feet. Based on this, impacts related to groundborne vibration would not exceed the thresholds for architectural damage or annoyance to persons (refer to Table 3.11-2) and there would be no impact.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The Project site is located approximately three miles from the Reedley Municipal Airport and is not within the airport land use plan. Therefore, no airport-related noise impacts would occur.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the area to excessive noise levels?

There are no private airstrips located in the vicinity of the Project site. Therefore, no impacts would result from Project implementation.

3.11.6.2 Exceedences of Noise Level Standards

Impact Statement

Impact NO-1: Would the Project result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? **(CEQA Guidelines Threshold Criteria (a))**

Impact Analysis

The General Plan establishes L_{dn} values of 60 dB or less as normally acceptable for residential land uses as well as for other sensitive receivers. Between 55 and 65 dB is conditionally acceptable. The County Code limits median noise levels to less than 50 dB L_{50} and 45 dB L_{50} or less for day and night, respectively.

Table 3.11-12 summarizes the predicted noise exposure from on-site noise sources at the nearest noise-sensitive receivers, including the additional noise-reduction resulting from the noise-control measures in the Project design (see DEIR Sections 2.0 and 3.11.5.2). The impact analysis assumes that each noise source operates each hour of the day with exception of the recycle plant, which is assumed to operate during the daytime only.

Table 3.11-11 indicates that, with the proposed noise control measures included in the Project design, noise generated by the plant-area sources (aggregate processing, asphalt, concrete, and recycle plants) are predicted to satisfy the daytime and nighttime median (L_{50}) noise standards of Fresno County at all of the nearest residences with the exception of Receptor 8, where aggregate plant noise levels could exceed the County's nighttime noise standard by 1 dB and if operated simultaneously with other equipment in the Plant Area, the noise levels at Receptor 8 may exceed the noise standard by 3 dB.

Table 3.11-12 indicates that, due to a much closer proximity to existing residences, Project excavation and the Project (i.e. plant and excavation) activities would likely result in exceedance of the County's nighttime noise standards of significance at 7 of the 15 residences located closest to the Project site. If excavation activities were limited to daytime hours, Table 3.11-12 indicates that the County's daytime

noise standards would be satisfied at each receptor with exception of Receptor 10 which would exceed the daytime threshold by one (1) dB.

Level of Significance before Mitigation

The Project would cause exposure of persons and/or generation of noise levels in excess of established standards. Therefore, this Project impact is potentially significant.

Mitigation Measures

Mitigation Measure NO-1

The following specific measures are required to ensure impacts associated with Project dragline excavation are less than significant:

1. The reference sound levels associated with dragline operation shall be verified through noise level measurements immediately upon commencement of dragline operations at the Project site. In the event that actual noise emissions of the dragline exceed the assumptions contained within this analysis, additional noise control measures shall be implemented. Those measures would include replacing fan motors with variable drive motors and/or installation of cooling air inlet and/or exhaust silencers directly to the dragline as required to satisfy the Fresno County Noise Ordinance standards.
2. Except during a public emergency that requires immediate production of aggregates and concrete products, excavation activities using the proposed dragline shall be limited to daytime hours when located within the following distances from noise receivers:
 - a. When operating the mine and aggregates plant only:
 - i. 600 ft from R3, R4, R5, R7, R9, R10.
 - ii. 900 ft from R8.
 - iii. 725 ft from R13.
 - iv. 925 ft from R14.
 - b. When operating the mine, aggregates plant and the hot mix asphalt plant and/or the ready mix concrete plant:
 - i. 600 ft from R3, R4, R5.
 - ii. 750 ft from R7, R9, R10.
 - iii. 1,050 ft from R8.
 - iv. 850 ft from R13.
 - v. 975 ft from R14.
3. Prior to mining within 900 feet of Residences 3, 4, 5, 7, & 9 along Riverbend Avenue, the proposed 10-foot tall berm should be constructed near the western edge of the proposed 100-foot excavation setback.
4. Prior to mining within 900 feet of Residence 10 along Riverbend Avenue, an 11-foot tall berm should be constructed near the western edge of the proposed 100-foot excavation

setback.

5. Prior to mining within 900 feet of Residence 13, the proposed 8-foot tall berm should be constructed near the southern edge of the proposed 100-foot excavation setback along the South side of Goodfellow from Riverbend Avenue to 2000 feet West of Riverbend Avenue.
6. Excavation activities within 1,000 feet of an existing residence shall be conducted such that the dragline cooling exhaust fans do not directly face the residence.

- **Mitigation Measure NO-2**

The following specific measures are required to ensure impacts associated with concurrent nighttime operation of the aggregates processing plant, mine, and other activities are less than significant:

1. Plant area noise at Receptor 8 shall be reduced 4 dB by implementing noise control measures which would include, but not be limited to, one or a combination of the following:
 - a. Aggregate stockpiles could be maintained so as to provide additional shielding of main processing plant noise generation in the direction of Receptor 8.
 - b. The proposed 10-foot tall earthen berm in the vicinity of Receptor 8 could be increased in height sufficient to reduce noise levels at Receptor 8 by 4 dB.
 - c. An additional sound barrier could be constructed adjacent to the noisiest plant area equipment to provide additional shielding in the direction of Receptor 8.
2. Following implementation of the additional noise control measures, daytime noise tests shall be conducted to confirm compliance with the County's 45 dB exterior noise standard during simultaneous nighttime operation of the aggregate processing plant with other Plant area activities.

Level of Significance after Mitigation

After mitigation, noise impacts in relation to established standards would be less than significant.

3.11.6.3 Substantial Permanent Increase in Ambient Noise Levels

Impact Statement

Impact NO-2: Would the Project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? **(CEQA Guidelines Threshold Criteria (c)).**

Impact Analysis

The Project's normal operating hours are used to assess this impact because extended hours are temporary and/or periodic and assessed under Impact NO-3 in Section 3.11.6.4.

Receivers of Noise Generated On-Site

The only activities normally occurring between 10 p.m. and 7 a.m. would be equipment maintenance and operation of the asphalt and ready mix concrete plants, which may begin as early as 4 a.m. Change in noise level predicted for each receiver in the peak day hour and peak night hour are presented in Table 3.11-15.

Table 3.11-15. Project Change in Noise Levels

Receiver	Project Day (L ₅₀ , dB)	Project Night (L ₅₀ , dB)	FICON Threshold (dB)	Day Exceeds FICON Threshold?	Night Exceeds FICON Threshold?
1	0	0	3	No	No
2	1	1	3	No	No
3	3	5	3	No	Yes
4	3	5	3	No	Yes
5	2	3	3	No	No
6	2	3	5	No	No
7	3	4	3	No	Yes
8	7	8	5	Yes	Yes
9	3	5	3	No	Yes
10	4	6	3	Yes	Yes
11	4	5	5	No	No
12	1	3	3	No	No
13	3	4	3	No	Yes
14	1	3	3	No	No
15	1	1	1.5	No	No

Notes: daytime (7 a.m. to 10 p.m.), nighttime (10 p.m. to 7 a.m.)

As presented in Table 3.11-15, daytime noise level at Receivers 8 and 10 are predicted to increase an amount greater than the FICON threshold during the day time. Receivers 3, 4, 7, 8, 9, 10, and 13 are predicted to increase an amount greater than the FICON threshold at night.

Receivers of Noise Generated Off-Site

Traffic volumes for future (2015), future (2019) and future (2035) conditions without the Project were provided by VRPA Technologies, Inc. The Project's proposed truck usage on the area roadways was also provided by VRPA Technologies, taking into account the planned yearly material production. Table 3.11-14 shows the predicted future Project traffic noise levels in terms of L_{dn} at a reference distance of 100 feet from the centerlines of existing Project area roadways for all Project scenarios. Table 3.11-14

also shows the change in traffic noise levels due to the addition of Project trucks, in parenthesis. The extent by which existing land uses located along the roadways listed below are affected by existing traffic noise depends on their proximity to the roads and their individual sensitivity to noise. A listing of the FHWA Model input data is provided in Appendix J.

It should be noted that, although the Table 3.11-14 data is provided at a reference distance of 100 feet from the roadway centerlines, it is recognized that distances from the roadway centerlines to existing residences located along Project haul routes vary. However, regardless of the distance between the roadway centerline and residences, the changes shown in Table 3.11-14 (i.e. the values in parentheses) are not distance dependent. This conclusion is illustrated by the following example. In Table 3.11-14, traffic noise levels are predicted at a reference distance of 100 feet from the roadway centerlines for the major routes which would be utilized by Project truck traffic. In the first row of data in Table 3.11-14 (McCall Avenue from SR-180 to Jensen Avenue), the data for the year 2015 indicates that the traffic noise level at the 100 foot reference distance, including Project truck traffic, would be 64 dB L_{dn} . The indicated Project-related traffic noise increase at that location is 1 dB, which means the 2015 traffic noise level along that roadway segment without the Project (the no-project condition) would be 63 dB L_{dn} . The data mean that, if a residence were located 100 feet from the centerline of McCall Avenue between SR-180 and Jensen Avenue, that residence would be exposed to a traffic noise level of 63 dB L_{dn} without the Project, and 64 dB L_{dn} with the Project. In this example, the Project-related traffic noise level increase for this hypothetical residence is 1 dB.

Traffic noise decreases at a rate of approximately 5 dB per doubling of distance from the roadway centerline. Using the example above, if a residence were located 200 feet from the centerline of McCall Avenue along this roadway segment, the predicted traffic noise level without the Project would be 58 dB L_{dn} ($63-5=58$). The traffic noise level at this theoretical residence located 200 feet from the roadway centerline with the Project would be 59 dB L_{dn} ($64-5=59$). The Project-related traffic noise level increase at this residence would also be 1 dB L_{dn} ($59-58=1$).

This example illustrates that the Project-related traffic noise level increase at both residences is 1 dB L_{dn} despite the fact that these hypothetical residences are located different distances from the roadway centerline. Because sound decreases with distance, it is expected that residences located closer to a roadway would be exposed to higher traffic noise levels than residences located further from the same roadway (5 dB higher in the case of the theoretical residences in this example). But this example illustrates that, despite the fact that the residences have different overall traffic noise exposure due to their being located different distances from the roadway centerline, the increase in noise levels experienced by both residences would be the same (1 dB). This 1 dB increase due to the Project holds regardless of the distance between the residence and roadway centerline. (Bollard, 2014b)

Level of Significance before Mitigation

The Project would increase daytime noise levels at Receivers 8 and 10 to an amount greater than the FICON threshold during the day time and would increase nighttime noise levels at Receivers 3, 4, 7, 8, 9, 10, and 13 to an amount greater than the FICON threshold at night.

The Project would permanently increase noise levels by greater than the FICON criteria (i.e. an increase of 3 dB or greater) at receivers located along several of the off-site haul routes.

Mitigation Measures

Mitigation Measures NO-1 and NO-2 described above would reduce noise levels at nearby receivers to less than the FICON thresholds as shown in Table 3.11-16.

Table 3.11-16. Mitigated Change in Noise Levels

Receiver	Project Day (L ₅₀ , dB)	Project Night (L ₅₀ , dB)	FICON Threshold (dB)	Day Exceeds FICON Threshold?	Night Exceeds FICON Threshold?
1	0	0	3	No	No
2	1	1	3	No	No
3	3	2	3	No	No
4	3	2	3	No	No
5	2	2	3	No	No
6	2	3	5	No	No
7	3	2	3	No	No
8	3	5	5	No	No
9	3	2	3	No	No
10	3	2	3	No	No
11	4	4	5	No	No
12	1	2	3	No	No
13	3	2	3	No	No
14	1	2	3	No	No
15	1	1	1.5	No	No

Notes: daytime (7 a.m. to 10 p.m.), nighttime (10 p.m. to 7 a.m.)

Mitigation measures which could be employed to reduce off-site heavy truck traffic noise levels, such as reduction of truck speeds, construction of off-site noise barriers, etc., would be infeasible. Specifically, speed limits are set based on surveys of existing speeds and cannot be arbitrarily lowered. Construction of off-site noise barriers would also be infeasible because the applicant does not own the right-of-way upon which such barriers would be constructed. Further, openings that would be required in such barriers for driveway access would significantly reduce noise barrier effectiveness.

Level of Significance after Mitigation

Noise impacts to nearby receivers would be less than significant.

Traffic noise impacts identified at residences located along Central Avenue, between McCall and Bethel and Academy and Newmark; and Goodfellow Avenue, between Newmark and Riverbend, would remain significant and unavoidable.

3.11.6.4 Substantial Temporary or Periodic Increase in Noise Levels**Impact Statement**

Impact NO-3: Would the Project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (**CEQA Guidelines Threshold Criteria (d)**).

Impact Analysis***Construction Noise***

During Project construction, noise will be generated by the creation of onsite haul roads, berm construction, and plant assembly. However, the noise generation of these sources is predicted to be at or below the noise generation of the noise sources evaluated in Table 3.11-8.

Periods of Public Emergency

The Project may periodically operate 24-hours per day during periods of public emergency that require immediate production of aggregates and concrete products. Impacts would be the same as those described in Section 3.11.6.3 but the night time buffer distances described in Mitigation Measure NO-1 may be suspended.

Level of Significance before Mitigation

Provided Project construction activities are limited to daytime hours, noise impacts associated with Project construction are expected to be less than impacts from the Project. Therefore, construction noise impacts are conservatively represented by impacts associated with the operation phase of the Project and are considered to be less than significant.

Noise levels generated when responding to public emergencies that require immediate production of aggregates and concrete products would not be considered a significant impact because of the infrequent nature of public emergencies. Operation of the Project including night time operation for major public road projects is assessed as a permanent change in the noise environment as discussed in Section 3.11.6.3. Thus, the operation phase of the Project would have a less than significant impact on temporary or periodic increases in noise.

Mitigation Measures

No mitigation is necessary for less than significant impacts.

Level of Significance after Mitigation

The Project impact remains less than significant.

3.11.7 Cumulative-Level Impacts and Mitigation Measures

As discussed in Section 3.11.6.1, CEQA Guidelines Thresholds b), e), and f) were determined to have no impact and therefore further evaluation is not considered necessary. The potential cumulative impacts associated with CEQA Thresholds a), c) and d) are discussed below.

Would the Project result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (CEQA Guidelines, (a)).

Projects 1 through 4 (Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates) identified on Table 3-1 (see Section 3.0) have completed the entitlement phase and two of these projects (Sanger-Centerville and Santa Fe Aggregates) were in operation when ambient noise measurements were taken and are therefore incorporated into the analysis.

Carmelita's processing area is approximately 2.7 miles from the Riverbend processing area. There are receptors located between the two projects, but the maximum exposed receiver, which would be located approximately half way between Carmelita and Riverbend, would still be over a one mile distance from each processing area. Projects 5 through 7 (Sanger Crossing Apartments, Pitman Farms and Family Dollar Store) are in the entitlement process and still being evaluated. These projects would only be considered noise sources during construction and are greater than 1.7 miles from the Project. Therefore, the noise from Carmelita, and Projects 5 through 7 are not expected to be cumulatively considerable.

The Kings River Sand and Gravel project is located to the southeast adjacent to the Riverbend Project. Receiver 13 is located between the two plant areas approximately 0.6 miles from the Riverbend plant area and 0.8 miles from the Kings River Sand and Gravel plant area. Predicted noise from Riverbend at Receiver 13 is less than the applicable thresholds. Predicted noise from Kings River Sand and Gravel at Receiver 13 is also less than the applicable thresholds. As a result, it is unlikely that the cumulative contribution of noise would be appreciably different from the noise generated by each aggregate producer operating independently.

Based upon the above discussion, the Project noise impact is less than cumulatively considerable.

Would the Project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Project? (CEQA Guidelines, (c)).

The Project would not cause a permanent increase in noise levels exceeding the FICON threshold at any of the receivers near the Project. However, Project traffic would cause noise levels along roadways to exceed the FICON threshold resulting in a significant noise impact. Thus, the Project, together with the noise from the Kings River Sand and Gravel project traffic and the Carmelita project, would also have a cumulatively considerable noise impact due to the permanent increase in noise at roadside receivers.

Would the Project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (CEQA Guidelines (d)).

The Project would not cause a substantial temporary or periodic increase in noise levels because the increase is permanent as assessed in the impact above. The Project would also not cause a cumulatively considerable temporary or periodic noise increase.

3.11.8 Alternatives to Significant Effects

No Project Alternative

The No Project Alternative would reduce noise impacts at nearby receivers resulting in no change from the existing physical setting other than from increased future traffic conditions and other projects that are unknown at this time.

Reduced Annual Production Alternative

This alternative would evaluate the potential impacts from artificially limiting the proposed production by a given amount. Noise impacts from on-site sources would not change from those described for the Project because these noise impacts are evaluated on a one-hour basis and the plant equipment would not be proposed to change. The noise impacts to receivers located along off-site routes of travel would be less because the average day would presumably have fewer truck trips.

Reduced Project Size Alternative

This alternative would evaluate the potential impacts from reducing the Project footprint. A buffer along the river would reduce noise impacts at receivers to the west.

Reduced Mining Depth Alternative

This alternative would evaluate the potential impacts from artificially reducing the mining depth by some stated amount. Reducing the mining depth would not affect noise levels because the elevation of the dragline would not change. Rather, the dragline bucket would be dropped a shorter distance into the pit, which occurs under water, having no effect on noise.

Different Phasing Alternative

This alternative would evaluate the potential impacts from revising the phasing plan. Noise characteristics of the Project noise sources are not expected to change over time. Therefore, re-phasing the Project would not have any effect on noise impacts.

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3.12 TRANSPORTATION AND TRAFFIC

3.12.1 Introduction

This section describes the local and regional transportation system and traffic conditions that occur in Project study area and presents an analysis of the potential traffic and transportation impacts associated with the Project. Information in this section is based on the Traffic Impact Study (TIS) prepared for the Project by VRPA Technologies (March 2014, Revised July, 2014). A copy of the TIS is provided in Appendix K. The TIS identified the Project study area and used generally-accepted traffic engineering principles and methods to estimate the amount of traffic that would be generated by the Project, future traffic conditions, potential impacts associated with the Project.

3.12.2 Environmental Setting

3.12.2.1 Regional Setting

The Project site is located in the San Joaquin Valley of California (refer to Figure 2-1 in the Project Description). The principal regional vehicular transportation corridors are State Route 99 (Golden State Highway) located approximately 10 miles southwest of the Project site and Interstate-5 (West Side Freeway) is located approximately 50 miles west of the Project site.

The principal airports in the region are Fresno-Yosemite International Airport located approximately 13 miles northwest of the Project site and Meadows Field in Bakersfield located approximately 90 miles south of the Project site.

3.12.2.2 Vicinity Setting

The Project site is located in Fresno County. In addition to the principal regional corridors identified above, State Route (SR) 180 (Kings River Highway) is located approximately 2.75 miles from the northern site boundary.

In addition to the international airport and regional airport identified above, the closest public-use airport to the Project site is the Reedley Municipal Airport located approximately 3.75 miles to the east. The closest private airport to the Project site is the Kings River Community College Airport located approximately 5.5 miles to the southeast.

The Union Pacific Railroad and Burlington Northern/Santa Fe (BNSF) corridors are located approximately 14 miles west of the Project site in the City of Fresno. The San Joaquin Valley Railroad branch line is located approximately 1.5 miles of west the Project site.

There is a planned Class II Bicycle/Recreational Facility along Academy Avenue and Newmark Avenue at Central/Goodfellow Avenue. A planned Class I Bicycle/Recreational Facility is located along Academy Avenue at Central Avenue.

3.12.2.3 Project Site Setting

The Project site shown in Figure 3.12-1 is relatively flat and currently consists of orchards and vineyards. Riverbend Avenue forms the eastern boundary of the Project site and is improved north of East Goodfellow Avenue and unimproved south of East Goodfellow. East Goodfellow Avenue bisects the Project site boundary (east-west alignment) and is classified as an arterial roadway. No roadways are located along the western site boundary.

Unimproved, non-dedicated private internal access roads are located on the Project site to support agricultural operations and to provide access to the residences.

A detailed description of the Project study area and existing roadway conditions is provided in Section 3.12.5 Methodology.

3.12.3 Regulatory Setting

3.12.3.1 Federal

The U.S. DOT provides funding and oversight of the Federal highway system. The Project would not require any Federal action because it is not located near an interstate highway. Therefore, no specific Federal regulations pertain to this traffic analysis.

3.12.3.2 State

California Department of Transportation – Streets and Highway Code

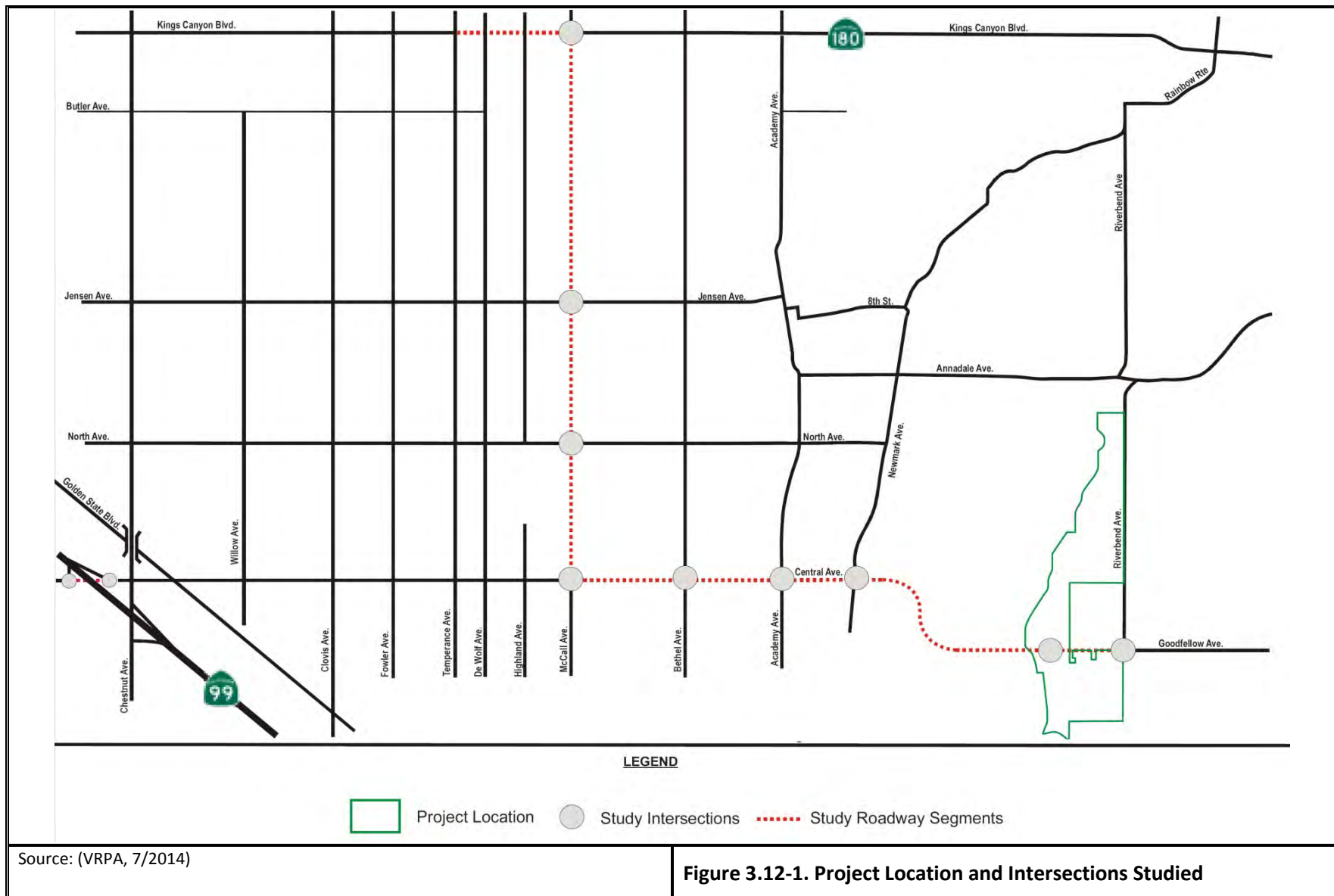
The California Street and Highway Code, Sections 660 to 734, grant the authority to the California Department of Transportation (Caltrans). Caltrans is responsible for planning, designing, building, operating, and maintaining the State highway system, including rail and mass transit. Caltrans established performance standards for all State highway facilities as Level of Service (LOS) C except where the existing LOS is D or below. LOS is discussed in detail in Section 3.12.5 Methodology. Within the Project study area, Caltrans is responsible for State Route 99 and State Route 180.

California Vehicle Code

In addition to maintaining highways, general regulations, laws dealing with licensing, traffic signage, and other noncommercial driver requirements, state laws and regulations also govern motor carriers on roadways within the State.

3.12.3.3 Local

The following County and the City of Sanger policies are applicable to the Project:



Fresno County General Plan

The Transportation and Circulation Element of the Fresno County General Plan (2000) provides the framework for the County to make decisions concerning the transportation system. It also provides for coordination with the cities and unincorporated communities within the county, the Regional Transportation Plan adopted by the Council of Fresno County Governments, and State and Federal agencies that fund and manage transportation facilities within the county. The element establishes standards that guide the development of the transportation system and management of access to the highway system by new development throughout the unincorporated areas of the county.

GOAL TR-A: To plan and provide a unified, coordinated, and cost-efficient countywide street and highway system that ensures the safe, orderly, and efficient movement of people and goods.

Policy TR-A.1 Roadway Design Standards: The County shall plan and construct County maintained streets and roads according to the County's Roadway Design Standards. Roadway design standards for County-maintained roads shall be based on the American Association of State Highway and Transportation Officials (AASHTO) standards, and supplemented by California Department of Transportation design standards and by County Department of Public Works & Planning Standards. County standards include typical cross sections by roadway classification, consistent with right-of-way widths summarized in Table TR-1 (of the County Plan).

The County may deviate from the adopted standards in circumstances where conditions warrant special treatment of the roadway. Typical circumstances where exceptions may be warranted may include: (a) Extraordinary construction costs due to terrain, roadside development, or unusual right-of-way needs; and (b) Environmental constraints that may otherwise entirely preclude road improvement.

Policy TR-A.2 Level of Service: The County shall plan and design its roadway system in a manner that strives to meet LOS D on urban roadways within the spheres of influences of the cities of Fresno and Clovis and LOS C on all other roadways in the County.

Roadway improvements to increase capacity and maintain LOS policies should be planned and programmed based on consideration of the total overall needs of the roadway system, recognizing the priority of maintenance, rehabilitation, and operation of the existing road system.

The County may, in programming capacity-increasing projects, allow exceptions to the LOS policies in this policy where it finds that the improvements or other measures required to achieve the LOS policy are unacceptable based on established criteria. In addition to consideration of the total overall needs of the roadway system, the County shall consider the following factors: (a) The right-of-way needs and the physical impacts on surrounding properties; (b) Construction and right-of-way acquisition costs; (c) The number of hours that the roadway would operate at conditions below the policy; (d) The ability of the required improvement to significantly reduce delay and improve traffic operations; and (e)

Environmental impacts upon which the County may base findings to allow an exceedance of the standards.

In no case shall the County plan for worse than LOS D on rural County roadways, worse than LOS E on Urban roadways within the spheres of influence of the cities of Fresno and Clovis, or in cooperation with Caltrans and the Council of Fresno County Governments, plan for worse than LOS E on State highways in the County.

Policy TR-A.3 Roadway Access: The County shall require that new or modified access to property abutting a roadway and to intersection roads conform to access specifications in the Circulation Diagram and Policies section. Exceptions to the access policies may be permitted in the manner and form prescribed in the Fresno County Zoning and Subdivision Ordinances, provided that the designed safety and operational characteristics of the existing and planned roadway facility will be substantially diminished.

Policy TR-A.4 Program Road Improvements: The County shall program road improvements on a countywide priority basis using technical assessment tools such as the Road and Traffic Evaluation (RATE) and Pavement Management System (PMS).

Policy TR-A.5 Rights-of-Way Dedications: The County shall require dedication of right-of-way or dedication and construction of planned road facilities as a condition of land development, and require an analysis of impacts of traffic from all land development projects including impacts from truck traffic. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. The County may allow a project to fund a fair share of improvements that provide significant benefit to others through traffic impact fees.

Policy TR-A.6 Regional Transportation Plan: The County shall continue to participate with the Council of Fresno County Governments, the California Department of Transportation, and other agencies, to maintain a current Regional Transportation Plan, and to identify funding priorities and development expenditure plans for available regional transportation funds, in accordance with regional, State, and Federal transportation planning and programming procedures. Such regional programming may include improvements to State highways, city streets, and County roadways.

Policy TR-A.7 Development Impact Fees: The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system.

Policy TR-A.8 Roadway Improvements: The County shall ensure that land development that affects roadway use or operation or requires roadway access to plan, dedicate, and construct required improvements consistent with the criteria in the Circulation diagram and Policies section of this element.

Policy TR-A.10 Financial Assistance: The County shall actively seek all possible financial assistance, including grant funds available from regional, State, and Federal agencies for street and highway purposes when compatible with General Plan policies and longterm local funding capabilities.

Policy TR-A.12 Multi-Modal: The County, where appropriate, shall coordinate the multi-modal use of streets and highways to ensure their maximum efficiency and shall consider the need for transit, bikeway, and recreational trail facilities when establishing the Ultimate Right-of-way Plan and Precise Plans of streets and highways.

Policy TR-A.19 Future Rights-of-Way: The County may identify locations of needed future road rights-of-way, consistent with adopted functional classifications, through development and adoption of specific plan lines where appropriate. Circumstances where specific plan line development may be considered may include the following:

- a) Where major classified roadways or corridors are expected to require additional through lanes within a 20-year planning horizon;
- b) Where the future alignment is expected to deviate from the existing alignment, or to be developed asymmetrically about the existing section or center line;
- c) Where the adjacent properties are substantially undeveloped, so that property owners may benefit from prior knowledge of the location of rights-of-way of planned roadways before construction improvements or developing property in a way which may ultimately conflict with identified transportation needs; and
- d) Expressways and associated frontage roads.

Goal TR-C To reduce travel demand on the County's roadway system and maximize the operating efficiency of transportation facilities so as to reduce the quantity of motor vehicle emissions and reduce the amount of investment required in new or expanded facilities.

GOAL TR-D To plan and provide a safe, continuous, and easily accessible bikeway system that facilitates the use of the bicycle as a viable alternative transportation mode and as a form of recreation and exercise.

Policy TR-D.5 Rights-of-Way Dedications: The County shall require that adequate rights-of-way or easements are provided for designated bikeways or trails as a condition of land development.

Fresno County Regional Bicycle Master Plan (Plan)

The Fresno County Regional Bicycle Master Plan (Plan) provides a comprehensive long-range view for the development of an extensive regional bikeway and recreational trails network that connects cities and unincorporated areas countywide.

Goal BP-A Develop a safe and convenient, interregional system of bikeways throughout Fresno County.

Policy BP-A.1 Coordinate the planning, design, and construction of regional bikeways with the appropriate agencies to provide consistency and continuity with the Fresno-Clovis Metropolitan Area (FCMA) bikeways as financially feasible.

Policy BP-A.5 Require development projects adjacent to designated bikeways to provide adequate rights-of-way or easements (see General Plan, Transportation and Circulation Element Policy TR-D.5).

General Plan Access Requirements for New Development along Arterials

Access to the Proposed Project would be provided via Goodfellow Avenue which is classified as an Arterial in the Fresno County General Plan. Pursuant to the County General Plan Transportation and Circulation Element, new developments along arterials shall conform to the following specifications:

- Direct access from an arterial to abutting property to maintain highway capacity and safety shall be restricted through application of design requirements of new development which may provide for frontage roads, deceleration/ acceleration lanes, restricted turn movements, access to other roads or driveways, or limits on the number and/ or location of points of direct access.
- Turnaround facilities shall be provided on parcels having direct access to arterials so that vehicles do not back out onto the roadway.
- Direct access points shall be located at sufficient intervals from each other and from public roads to maintain the safety and the traffic carrying capacity of the roadway. Wherever possible, direct access points shall be located to allow existing parcels one (1) direct access to an arterial. In some instances, where there is not sufficient frontage, two (2) or more parcels may be required to share one access point. In some instances where there is sufficient frontage, more than one direct access from a single parcel may be permitted.
- Existing direct access may be relocated, subject to the same standards as for new access.
- Access to a divided arterial may be restricted to right turn movements and median crossing may be prohibited.
- Access to an arterial may occur at intersections with expressways, super arterials, other arterials, and collectors. Access from local streets may be restricted through the use of islands and turn lanes.

City of Sanger

The City of Sanger's 2025 General Plan contains goals and policies that establish the following for LOS standards:

Goal 4: Provide and maintain a highway system with adequate capacity and acceptable levels of service to accommodate projected travel demands for the 20-year planning period.

Policy 4-2: The City has established a target LOS “C” along all major streets and highways except that LOS “D” may be allowed at intersections of any major street, highway or along street and highway segments where additional improvements are not feasible.

3.12.4 Significance Thresholds

3.12.4.1 Appendix G Thresholds from the State CEQA Guidelines

According to Appendix G of the CEQA Guidelines, the Project would have a significant effect if it would:

- a) *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.*
- b) *Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.*
- c) *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.*
- d) *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).*
- e) *Result in inadequate emergency access.*
- f) *Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.*

3.12.4.2 Additional Thresholds of Significance

To determine impacts on traffic operations associated with CEQA thresholds a) and b) above, the following thresholds of significance were also evaluated:

- Would the Project cause an intersection operating or projected to operate at LOS C or better under conditions without the Project to operate at LOS D or worse with the addition of Project traffic? (Addressed under CEQA Guidelines a) and b).)
- Would the Project contribute Project trips to an intersection or road segment that is currently operating, or is predicted to operate at LOS D or worse without Project traffic? (Addressed under CEQA Guidelines a) and b).)
- Would the Project increase the average delay for a study intersection that is currently operating, or is predicted to operate at LOS D or worse without Project traffic? (Addressed under CEQA Guidelines a) and b).)

- Would the Project generate traffic such that the Traffic Index (TI) would increase by a factor of 0.5? If so, then a project would be required to mitigate the roadway structural section to accommodate the increased truck traffic. (Fresno County Guidelines for the Preparation of Traffic Impact Studies - addressed separately as Impact Trans-7.)

3.12.5 Methodology of Analysis

This analysis is based on the TIS prepared by VRPA (March 2014, revised July 2014), review of applicable Federal, State and local requirements and guidelines, review of the environmental evaluation of similar projects in the area and comments received during the scoping process.

Scoping letters that contained specific concerns regarding transportation and traffic concerns include, but are not limited to, the following letters:

- Letter from the County Department of Public Works, August 1, 2013.
- Letter from the California Department of Transportation, District 6, September 13, 2013.
- Letter from the City of Reedley, September 13, 2013.

A copy of the Scoping Report which includes all the comment letters is provided in Appendix A.

3.12.5.1 Project Study Area and Study Scenarios

The first steps toward assessing traffic impacts are to identify the study area, and to develop the study scenarios to be evaluated. The following provides a general discussion of how this was accomplished for the Project. A more detailed description is provided in the TIS (Appendix K).

Project Study Area

The Project study area includes the access point to the Project, the roadways adjacent to the Project and the network of roadways surrounding the Project. The access point to the Project would be located along Goodfellow Avenue west of Riverbend Avenue. The intersections and roadway segments included in the traffic analysis were determined in consultation with the County and Caltrans. These intersections and roadway segments, as well as the Project location are shown on Figure 3.12-1 and include:

Intersections

- SR 180 (Kings Canyon Road) / McCall Avenue;
- Jensen Avenue / McCall Avenue;
- North Avenue / McCall Avenue;
- Goodfellow Avenue / Riverbend Avenue;
- Central Avenue / Newmark Avenue;
- Central Avenue / Academy Avenue;
- Central Avenue / Bethel Avenue;

- Central Avenue / McCall Avenue;
- Central Avenue / SR 99 NB On-Ramp;
- Central Avenue / SR 99 SB Off-Ramp; and
- Goodfellow Avenue / Project Driveway.
- Manning Avenue / SR 99 Interchange

Roadway Segments

- SR 180 between:
 - o McCall Avenue to Highland Avenue
 - o Highland Avenue to De Wolf Avenue
 - o De Wolf Avenue to Temperance Avenue
- McCall Avenue between:
 - o Central Avenue to North Avenue
 - o North Avenue to Jensen Avenue
 - o Jensen Avenue to SR 180 (Kings Canyon Road)
- Goodfellow Avenue between:
 - o Riverbend Avenue to Newmark Avenue
- Central Avenue between:
 - o Newmark Avenue to Academy Avenue
 - o Academy Avenue to Bethel Avenue
 - o Bethel Avenue to McCall Avenue
 - o SR 99 NB On-Ramp to SR 99 SB Off-Ramp

Project Study Scenarios

The study scenarios completed for the Project included an LOS analysis for the following traffic conditions:

- Existing Conditions;
- Existing Plus Project Conditions;
- Existing Plus Approved/Pending Conditions;
- Existing Plus Project Plus Approved/Pending Conditions;
- Year 2015 (Phase 1 of the Project) Conditions;
- Year 2017 (Phase 2 of the Project) Conditions;
- Year 2019 (Phase 3 of the Project) Conditions;
- Cumulative 2035 No Project Conditions; and
- Cumulative 2035 Plus Project Conditions.

3.12.5.2 Existing Conditions

Existing Traffic Counts and Roadway Geometrics

A key aspect of the traffic analysis is to assess the existing traffic conditions. Existing AM and PM peak hour turning movements were collected at each Project intersection by National Data and Surveying Services. Traffic counts were conducted for the peak hour periods of 7:00-9:00 AM and 4:00-6:00 PM for all key intersections on Tuesday, December 13, 2011. Traffic count data worksheets are provided in Appendix B of the TIS (Appendix K of this DEIR). Seasonal adjustment factors for the count dates shown above were provided by County staff. For Tuesday, December 13, 2011, the seasonal adjustment factor is 0.96. As a result, seasonal adjustment factors were not applied to the counts because applying the factors to the counts would result in lower intersection and segment volumes. Traffic counts were also conducted on January 30, 2014 at SR 180 and Highland Avenue and SR 180 and De Wolf Avenue for the purposes of determining segment impacts along SR 180 between Highland Avenue and Temperance Avenue.

Existing Functional Roadway Classification System

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the type of service they are intended to provide. Fundamental to this process is the recognition that individual streets and highways do not serve travel independently in any major way. Rather, most travel involves movement through a network or system of roads.

The following describes the six (6) basic classifications of roadway systems and identifies the types of systems that are present in the Project area:

- State Routes: Roadway facilities maintained by Caltrans. Caltrans manages more than 50,000 miles of California's highway and freeway systems.
 - State Route 99 – currently exists as a six-lane freeway with a posted speed limit of 70 mph. According to the Caltrans' website, the average annual daily traffic (AADT) along SR 99 in this area consisted of approximately 84,500 trips in 2010.
 - State Route 180 – currently exists as a four-lane highway from Academy Avenue to De Wolf Avenue with a posted speed limit of 65 mph. According to the Caltrans' website, the AADT along SR 180 in this area consisted of approximately 16,600 trips in 2010.
- Expressways: High-speed, two- to six-lane divided roadways, primarily servicing through and cross-town traffic, with no direct access to abutting property and at-grade intersections located at approximately half-mile intervals.
 - Jensen Avenue (West of the City of Sanger) - currently a divided four-lane road without bike lanes, with a posted speed limit of 55 to 65 mph.
- Super Arterial: Four-to six-lane divided roadways with a primary purpose of moving traffic to and from major traffic generators and between community plan areas. Access will typically be

limited to right-turn entrance and exit vehicular movements. There are no super arterials in the Project study area.

- Arterial: Four- to six-lane divided roadways, with somewhat limited access to abutting properties, and with the primary purpose of moving traffic within and between community plan areas and to and from freeways and expressways.
 - Academy Avenue – currently a divided four-lane road with bike lanes in various places, with a posted speed limit between 30 and 40 mph.
 - North Avenue – currently an undivided two-lane road without bike lanes, with a posted speed limit between 35 to 55 mph.
 - Bethel Avenue - currently an undivided two-lane road without bike lanes, with a posted speed limit of 55 mph.
 - Goodfellow Avenue – currently an undivided two-lane road without bike lanes, with a posted speed limit of 55 mph.
 - Jensen Avenue (Within the City of Sanger) – currently an undivided four-lane road without bike lanes, with a posted speed limit of 30 mph within the City of Sanger.
 - McCall Avenue – currently an undivided two-lane road without bike lanes, with a speed limit of 55 mph.
 - Newmark Avenue – currently an undivided two-lane road without bike lanes, with a posted speed limit of 55 mph.
 - Central Avenue (SR 99 to Clovis Avenue and Academy Avenue to Newmark Avenue) - currently an undivided two-lane road without bike lanes, with a posted speed limit of 55 mph.
- Collectors: Two to four-lane undivided roadways, with the primary function of connecting local streets and arterials and neighborhood traffic generators and providing access to abutting properties.
 - Central Avenue (Clovis Avenue to Academy Avenue) – currently an undivided two-lane road without bike lanes, with a posted speed limit between 45 and 55 mph.
- Local Streets: Two- to three-lane public or private roadways designed to provide direct access to properties while discouraging through traffic between major streets. They are intended to carry low volumes of traffic and support unrestricted on-street parking.

3.12.5.3 Level of Service

The street and highway intersections and segments in the study area were analyzed to determine LOS utilizing the Highway Capacity Manual (HCM). LOS is an indicator of operating conditions on a roadway or at an intersection and is defined in categories ranging from LOS A to LOS F, with LOS A representing

the best traffic flow conditions and LOS F representing poor conditions. LOS A indicates free-flowing traffic and LOS F indicates substantial congestion with stop-and-go traffic and long delays at intersections. The following sections discuss the levels of service on the study area road segments and intersections under existing conditions and for the other study scenarios listed in Section 3.12.5.1.

Intersection Level of Service

The LOS analysis for the Project was conducted using the Synchro traffic timing program. Table 3.12-1 provides the County General Plan LOS target levels by intersections.

Table 3.12-1. General Plan Target LOS by Intersection

Intersection	Jurisdiction	Target LOS ¹
1. SR 180 (Kings Canyon Road) / McCall Avenue ²	Caltrans/County of Fresno	C
2. Jensen Avenue / McCall Avenue ²	Fresno County	C
3. North Avenue / McCall Avenue ³	Fresno County	C
4. Goodfellow Avenue / Riverbend Avenue ⁴	Fresno County	C
5. Central Avenue / Newmark Avenue ³	City of Sanger/ County of Fresno	C
6. Central Avenue / Academy Avenue ³	City of Sanger/ County of Fresno	C
7. Central Avenue / Bethel Avenue ³	Fresno County	C
8. Central Avenue / McCall Avenue ³	Fresno County	C
9. Central Avenue / SR 99 NB On-Ramp ⁵	Caltrans	C
10. Central Avenue / SR 99 SB Off-Ramp ⁴	Caltrans	C
11. Goodfellow Avenue / Project Driveway ⁴	Fresno County	C

¹ Based on respective jurisdiction General Plan Standards

² Signalized intersection.

³ Four-way stop.

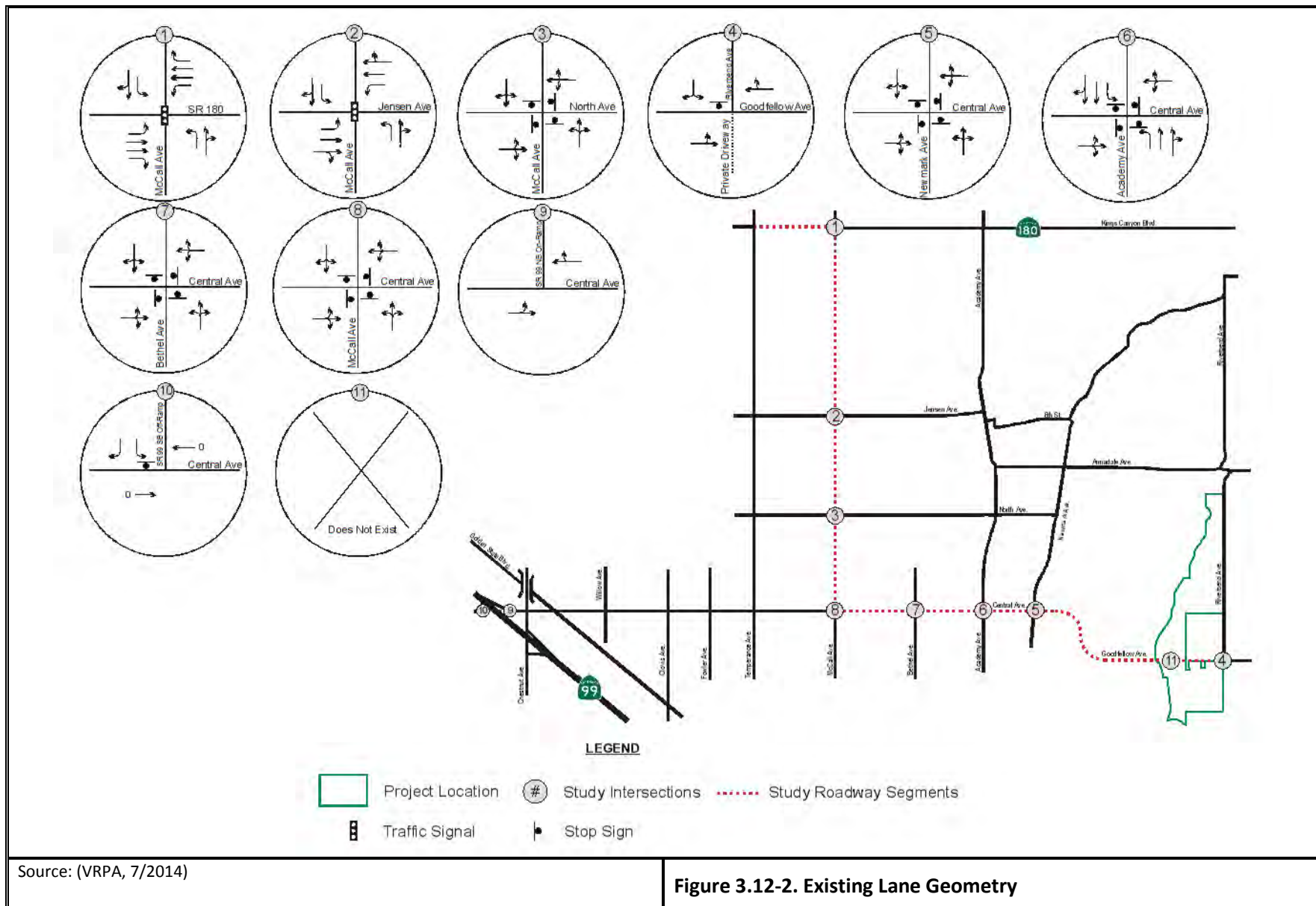
⁴ One-way stop.

⁵ One-way yield intersection.

Source: VRPA, 7/2014 (Appendix K).

LOS can be determined for both signalized and unsignalized intersections. Two (2) of the study intersections are currently signalized, while nine (9) are unsignalized. The existing lane geometry at key study area intersections is shown in Figure 3.12-2. Figure 3.12-3 and Figure 3.12-4 show existing traffic volumes for the AM and PM peak hours in the study area.

Table 3.12-2 and Table 3.12-3 indicate the ranges in the amounts of average delay for a vehicle at signalized and unsignalized intersections for the various levels of service ranging from LOS “A” to “F”.



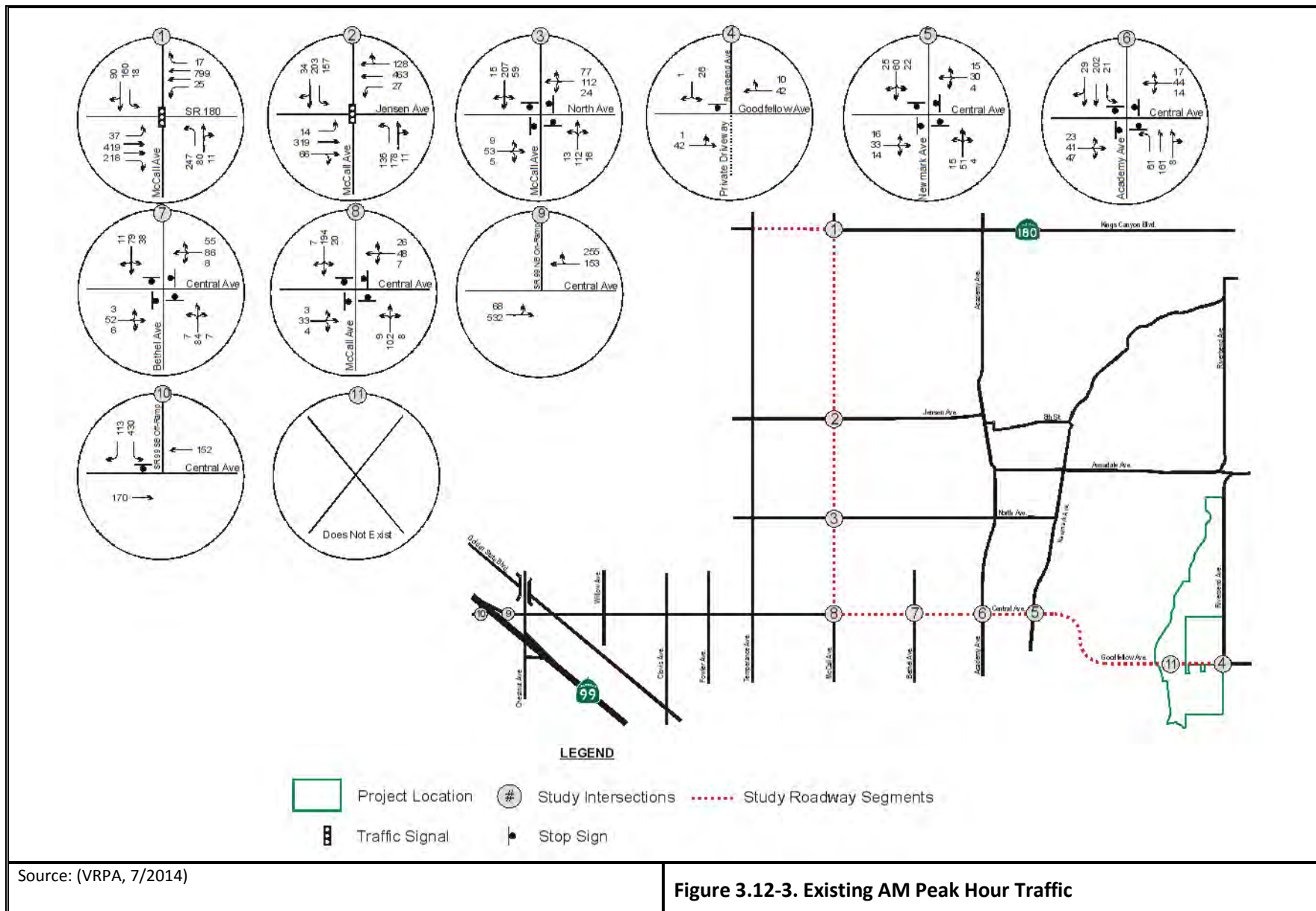
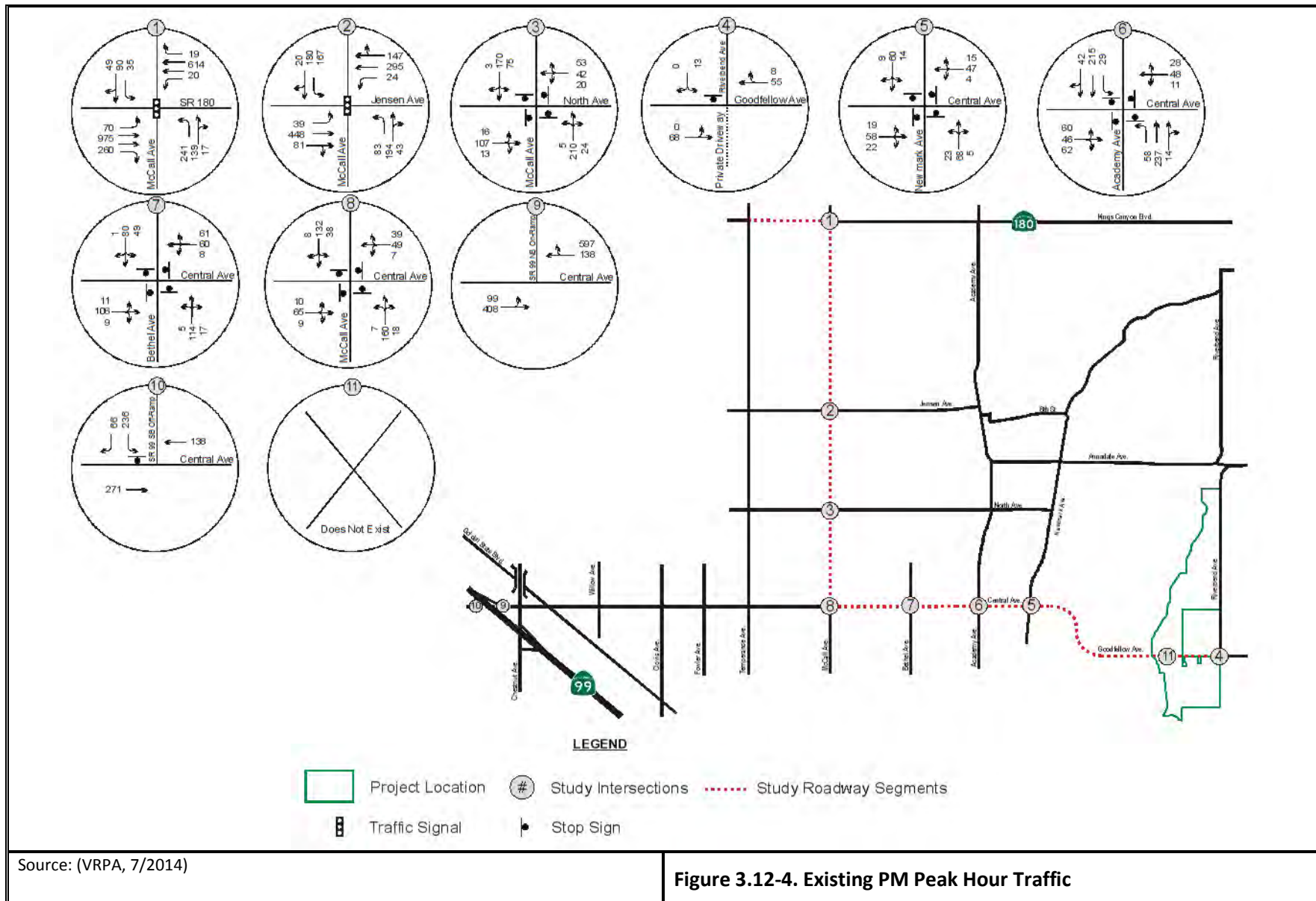


Figure 3.12-3. Existing AM Peak Hour Traffic



Source: (VRPA, 7/2014)

Figure 3.12-4. Existing PM Peak Hour Traffic

Table 3.12-2. Signalized Intersections Level of Service Definitions

Level of Service	Definition	Average Total Delay (sec/veh)
A	Describes operations with very low delay. This level of service occurs when there is no conflicting traffic for a minor street.	≤ 10.0
B	Describes operations with moderately low delay. This level generally occurs with a small amount of conflicting traffic causing higher levels of average delay.	$> 10.0 - 20.0$
C	Describes operations with average delays. These higher delays may result from a moderate amount of minor street traffic. Queues begin to get longer.	$> 20.0 - 35.0$
D	Describes a crowded operation, with below average delays. At level D, the influence of congestion becomes more noticeable. Longer delays may result from shorter gaps on the mainline and an increase of minor street traffic. The queues of vehicles are increasing.	$> 35.0 - 55.0$
E	Describes operations at or near capacity. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor gaps for the minor street to cross and large queues.	$> 55.0 - 80.0$
F	Describes operations that are at the failure point. This level, considered to be unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of the intersection. Insufficient gaps of suitable size exist to allow minor traffic to cross the intersection.	> 80.0

Source: VRPA, 7/2014 (Appendix K).

Table 3.12-3. Unsignalized Intersections Level of Service Definitions

Level of Service	Definition	Average Total Delay (sec/veh)
A	No delay for stop-controlled approaches.	$0 - 10.0$
B	Describes operations with minor delay.	$> 10.0 - 15.0$
C	Describes operations with moderate delays.	$> 15.0 - 25.0$
D	Describes operations with some delays.	$> 25.0 - 35.0$
E	Describes operations with high delays and long queues.	$> 35.0 - 50.0$
F	Describes operations with extreme congestions, with very high delays and long queues unacceptable to most drivers.	> 50.0

Source: VRPA, 7/2014 (Appendix K).

The signalized LOS standards applied to calculate the intersection LOS for the Project are in accordance with the current edition of the HCM. Intersection turning movement counts and roadway geometrics used to develop the LOS calculations were obtained from field review findings and count data as discussed in the TIS (Appendix K).

When an unsignalized intersection does not meet acceptable LOS standards, the investigation of the need for a traffic signal is evaluated. The California Manual on Uniform Traffic Control Devices for

Streets and Highways dated January 13, 2012 (CMUTCD), introduces standards for determining the need for traffic signals. The CMUTCD Peak Hour Warrant (Warrant 3) was used in this analysis to determine if a traffic signal would be warranted at unsignalized intersections that fell below current LOS standards.

Segment Level of Service

According to the HCM, LOS is categorized by two parameters of traffic: uninterrupted and interrupted flow. Uninterrupted flow facilities do not have fixed elements such as traffic signals that cause interruptions in traffic flow. Interrupted flow facilities do have fixed elements that cause an interruption in the flow of traffic, such as stop signs and signalized intersections along arterial roads. A roadway segment is defined as a stretch of roadway generally located between signalized or controlled intersections.

Segment LOS is important in order to understand whether the capacity of a roadway can accommodate future traffic volumes. Table 3.12-4 provides definitions for segment LOS A - F. The performance criteria used for evaluating volumes and capacities on the road and highway system for this study were estimated using the Modified HCM-Based LOS Tables (Florida Tables). The tables consider the capacity of individual road and highway segments based on numerous roadway variables (design speed, passing opportunities, signalized intersections per mile, number of lanes, saturation flow, etc.). These variables were identified and applied to reflect segment LOS conditions. A more detailed discussion is provided in the TIS (Appendix K).

Table 3.12-4. Segment Level of Service Definitions

Level of Service	Definition
A	Represents free flow. Individual vehicles are virtually unaffected by the presence of others in the traffic stream.
B	Is in the range of stable flow, but the presence of other vehicles in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
C	Is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual vehicles becomes significantly affected by interactions with other vehicles in the traffic stream.
D	Is a crowded segment of roadway with a large number of vehicles restricting mobility and a stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
E	Represents operating conditions at or near the level capacity. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
F	Is used to define forced or breakdown flow (stop-and-go gridlock). This condition exists when the amount of traffic approaches a point where the amount of traffic exceeds the amount that can travel to a destination. Operations within the queues are characterized by stop and go waves, and they are extremely unstable.

Source: VRPA, 7/2014 (Appendix K).

3.12.5.4 Intersection Capacity Analysis

All intersection LOS analyses were estimated using Synchro 7 Software. Various roadway geometrics, traffic and pedestrian volumes, and properties (signal timing, peak hour factors, etc.) were input into the Synchro 7 Software program in order to accurately determine the travel delay and LOS for each study scenario. The intersection LOS and delays reported represent the Synchro outputs which are provided in the TIS. Synchro assumptions, listed below, show the various Synchro inputs and methodologies used in the analysis.

Lane Geometry

- Storage lengths for turn lanes for existing intersections were measured in the field and rounded to the nearest 25 feet.
- Storage lengths for turn lanes for future intersections were estimated based on traffic forecasts.

Traffic Conditions

- The peak hour factor for existing conditions were determined using existing counts based on approach of movement.
- The peak hour factor for future scenarios is 0.92.
- Roadway link speeds were evaluated in the field and input into the Synchro network.
- The Right Turn on Red parameter was set to 'Yes'.

Signal Timing Parameters

- Signal timing sheets (provided by the City of Fresno and Caltrans) were used to input walk time, don't walk time, minimum initial time, maximum limit time, yellow times, and red times for each study intersection. Signal timing sheets can be found in Appendix C of the TIS.
- Signal phasing remained constant throughout scenarios unless the project or any other planned improvements are specifically changing an intersection. Lead-Lag Optimize was set to "fixed" for all scenarios.
- When conducting Synchro optimizations, the Allow Uncoordinated option was set to Always, the Allow Half Cycle Option was turned off, Offset Optimization was set at Medium, and the Automatic Optimization option was used.

Truck Percentage

Truck counts were conducted during the week of December 12, 2011 along the segments of Central Avenue between Golden State Boulevard and Willow Avenue and between Academy Avenue and Newmark Avenue, McCall Avenue between Jensen Avenue and North Avenue, and SR 180 between McCall Avenue and Del Rey Avenue. Truck counts are provided in Appendix B of the TIS (located in DEIR Appendix K). After reviewing the truck counts, the following truck percentages were determined:

- Central Avenue between Golden State and Willow Avenue – 13%;

- Central Avenue between Academy Avenue and Newmark Avenue – 3%;
- McCall Avenue between Jensen Avenue and North Avenue – 2%; and
- SR 180 between McCall Avenue and Del Rey Avenue – 8%.

Based on these findings, VRPA used 13% for the truck percentage input into Synchro 7 for Central Avenue between McCall Avenue and Academy Avenue (which is a conservative estimate), 8% along SR 180 between McCall and Termperance (which is a conservative estimate) and 3% for all other street truck percentage inputs.

Table 3.12-5. Existing Intersection Operations

Intersection	Control	Peak Hour	Existing Delay	Existing LOS
1. McCall Avenue / SR-180	Signalized	AM PM	30.1 28.9	C C
2. McCall Avenue / Jensen Avenue	Signalized	AM PM	26.9 25.9	C C
3. McCall Avenue / North Avenue	All-Way Stop Sign	AM PM	11.9 11.1	B B
4. Riverbend Avenue / Goodfellow Avenue	One-Way Stop Sign	AM PM	9.4 9.4	A A
5. Newmark Avenue / Central Avenue	All-Way Stop Sign	AM PM	8.1 8.2	A A
6. Academy Avenue / Central Avenue	All-Way Stop Sign	AM PM	10.1 12.9	B B
7. Bethel Avenue / Central Avenue	All-Way Stop Sign	AM PM	9.1 9.4	A A
8. McCall Avenue / Central Avenue	All-Way Stop Sign	AM PM	9.7 9.4	A A
9. SR-99 NB On-Ramp / Central Avenue	EB Left – Yield	AM PM	1.5 2.3	A A
10. SR-99 SB Off-Ramp / Central Avenue	One-Way Stop Sign	AM PM	-- 19.0	C* C

Delay is measured in seconds.

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

For signalized and all-way stop controlled intersections, delay results show the average for the entire intersection. For one-way and two-way stop controlled intersections, delay results show the delay for the worst movement.

* Traffic signal not warranted; LOS C assumed.

Source: VRPA, 7/2014 (Appendix K).

Results show that none of the study intersections are currently operating worse than the minimum level of service. It should be noted that the intersection of Central Avenue at SR 99 SB off-ramp does not meet traffic signal warrants during the AM peak hour. Table 3.12-5 shows the intersection LOS for the

existing conditions. Synchro 7 Worksheets are provided in Appendix D of the TIS located in Appendix K of this DEIR.

3.12.5.5 Segment Analysis

Results of the AM and PM peak hour LOS segment analysis along the existing street and highway system are reflected in Table 3.12-6. Street segment capacity was determined using information shown in Table 3.12-7, which comes from the Modified Arterial Level of Service Tables included in Appendix A of the TIS located in Appendix K of this DEIR. The performance criteria used for evaluating volumes and capacities on the road and highway system for Caltrans facilities were estimated using HCM methodologies (HCS 2010) and analysis worksheets are provided in Appendix E of the TIS located in Appendix K of this DEIR.

Table 3.12-6. Existing Street Segment Operations

Street Segment	Direction	Peak Hour	Existing Volume	Existing LOS
SR 180				
McCall Avenue to Highland Avenue	EB	AM	839	A
		PM	1,353	B
	WB	AM	1,554	B
		PM	904	A
Highland Avenue to De Wolf Avenue	EB	AM	843	A
		PM	1,390	B
	WB	AM	1,567	B
		PM	879	A
De Wolf Avenue to Temperance Avenue ¹	EB	AM	865	A
		PM	1,450	B
	WB	AM	1,630	B
		PM	899	A
McCall Avenue				
SR-180 to Jensen Avenue	NB	AM	338	B
		PM	397	B
	SB	AM	403	B
		PM	370	B
Jensen Avenue to North Avenue	NB	AM	324	B
		PM	320	B
	SB	AM	296	B
		PM	285	B
North Avenue to Central Avenue	NB	AM	141	B
		PM	239	B
	SB	AM	236	B
		PM	203	B
Central Avenue Avenue				
SR-99 NB On-Ramp to SR-99 SB Off-ramp	EB	AM	600	C
		PM	507	C
	WB	AM	153	B

Street Segment	Direction	Peak Hour	Existing Volume	Existing LOS
McCall Avenue to Bethel Avenue	EB	PM	138	B
		AM	61	B
		PM	126	B
Bethel Avenue to Academy Avenue	WB	AM	104	B
		PM	95	B
		AM	111	B
Academy Avenue to Newmark Avenue	EB	PM	172	B
		AM	149	B
		PM	148	B
Goodfellow Avenue	WB	AM	70	B
		PM	99	B
		AM	75	B
Newmark Avenue to Riverbend Avenue	EB	PM	87	B
		AM	59	B
		PM	77	B
	WB	AM	49	B
		PM	66	B

LOS = Level of Service / BOLD denotes LOS standard has been exceeded.

¹ Freeway segment.

Source: VRPA, 7/2014 (Appendix K).

Table 3.12-7. Peak Hour One-way Volumes

Lanes	Divided	LOS B	LOS C	LOS D	LOS E
Freeways					
2	Divided	2,200	3,020	3,720	4,020
3	Divided	3,300	4,580	5,580	6,200
4	Divided	4,400	6,080	7,420	8,400
State Roadways					
1	Undivided	510	820	880	**
2	Divided	1,560	1,890	1,960	**
3	Divided	2,400	2,860	2,940	**
4	Divided	3,240	3,830	3,940	**
Non-State Roadways					
1	Undivided	459	738	792	**
2	Divided	1,404	1,701	1,764	**
3	Divided	2,160	2,574	2,646	**
4	Divided	2,916	3,447	3,546	**

** Not applicable for that level of service letter grade. Volumes greater than level of service D become F because intersection capacities have been reached.

Source: VRPA, 7/2014 (Appendix K).

Project Design Features, BMPs and Environmental Protection and Minimization Measures

As discussed in Section 2.2.17, numerous design features, BMPs, operating practices and other environmental protection measures have been incorporated into the Project to minimize potential impacts on the environment. There are no Project design features that are specific only to off-site transportation and traffic.

Processing Material from Phases 6A & B and 7 at the CUP 3052 Plant

If materials from Phases 6A, 6B and 7 were to be processed at the CUP 3052 plant (Section 2.2.15.7), the relocation of a conveyor within the Project site would not create any different or additional effects on the off-site transportation and traffic.

3.12.6 Project-Level Impacts and Mitigation Measures**3.12.6.1 Issues Found to Have the Potential to Result in Potentially Significant Impacts**

All of the significance thresholds listed in Section 3.12.4 above have the potential to result in potentially significant impacts and are individually analyzed below.

3.12.6.2 Impacts to Circulation Systems and Congestion Management**Impact Statement**

Impact TRANS-1: Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? **(CEQA Guidelines Threshold Criteria (a))**

Impact TRANS-2: Would the Project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? **(CEQA Guidelines Threshold Criteria (b))**

Impact Analysis

The Project would result in increased vehicle trips, primarily truck trips associated with haul trucks leaving the site with materials and coming to the site to receive materials. This impact discusses the effect these trips would have on roadway and intersection LOS within the study area. The impact discussion below describes the estimated trip generation and distribution of those trips on the study area roadways. The analysis then provides a capacity analysis of the Project study scenarios. The section then presents recommended roadway and intersection improvements necessary to achieve acceptable levels of service at the intersections and roadways predicted to operate at unacceptable conditions.

Trip Generation and Distribution**Trip Generation**

To assess the impacts that the Project may have on the surrounding street and highway segments and intersections, the first step is to determine Project trip generation. Project trip generation is shown in Table 3.12-8. Daily and peak hour Project truck trip generation was provided by Riverbend Sand and Gravel representatives and reviewed by VRPA. Based on their review and analysis, VRPA agreed with the trip generation and peak hour volumes provided by Riverbend Sand and Gravel. A daily “trip” is defined as a “one-way” trip. AM and PM peak hour percentages and splits are based on information provided by Project representatives. Peak Hourly sales of each product are based on the maximum hourly production capacity of each plant and the maximum loading capacity of the mobile loading equipment (loaders). The plants will be constructed with the maximum hourly production capacity. Therefore, while annual production may increase, the peak hour sales capacity is the same throughout the life of the Project. Information on Project production levels and phased Project production is included in Appendix E of the TIS (located in DEIR Appendix K).

Table 3.12-8. Project Trip Daily and Peak Hour Volumes

Use	Total Sales ³	Average Daily Trip Ends Volume ¹	AM Peak Hour Volume ²				PM Peak Hour Volume ²			
			In:Out Split	In	Out	Total	In:Out Split	In	Out	Total
Phase 1 (Year 2015)	0.35 MMtpy	162 Truck Trips 62 Other Trips ⁴	50:50 86:14	72 2	72 0	144 2	50:50 20:80	4 1	4 6	8 7
Phase 2 (Year 2017)	0.70 MMtpy	308 Truck Trips 86 Other Trips ⁴	50:50 86:14	72 2	72 0	144 2	50:50 20:80	4 1	4 6	8 7
Phase 3 (Year 2019)	1.25 MMtpy ⁵	516 Truck Trips 90 Other Trips ⁴	50:50 86:14	72 2	72 0	144 2	50:50 20:80	4 1	4 6	8 7
Total Project Trips ⁵				74	72	146		5	10	15
Total Passenger Car Equivalent Project Trips ⁶				182	180	362		11	16	27

¹ A “trip” is defined as a “one-way” trip.

² Based on Riverbend Peak Hour Operations.

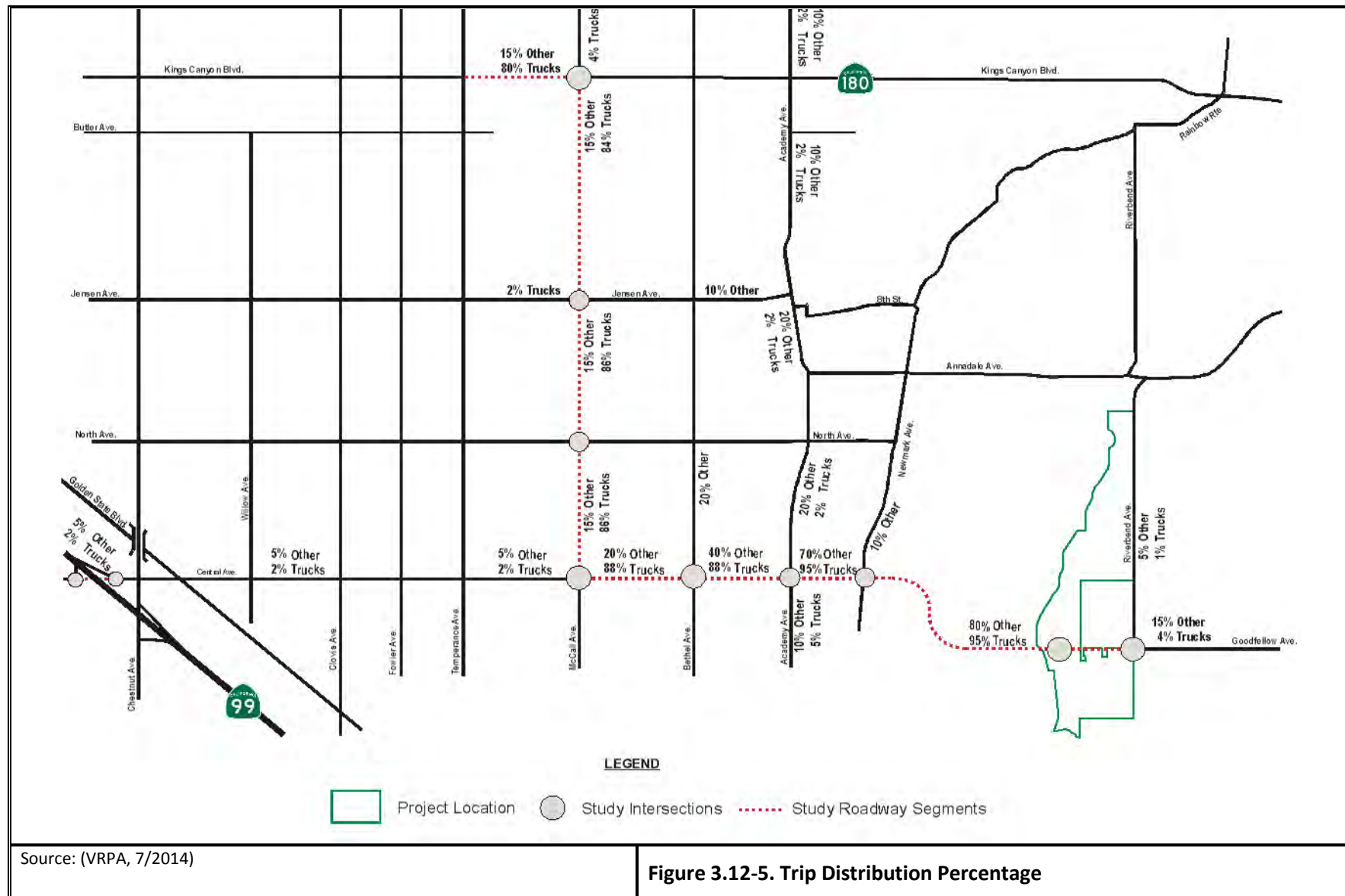
³ Aggregate sales includes aggregate for on-site asphalt and ready-mix plants.

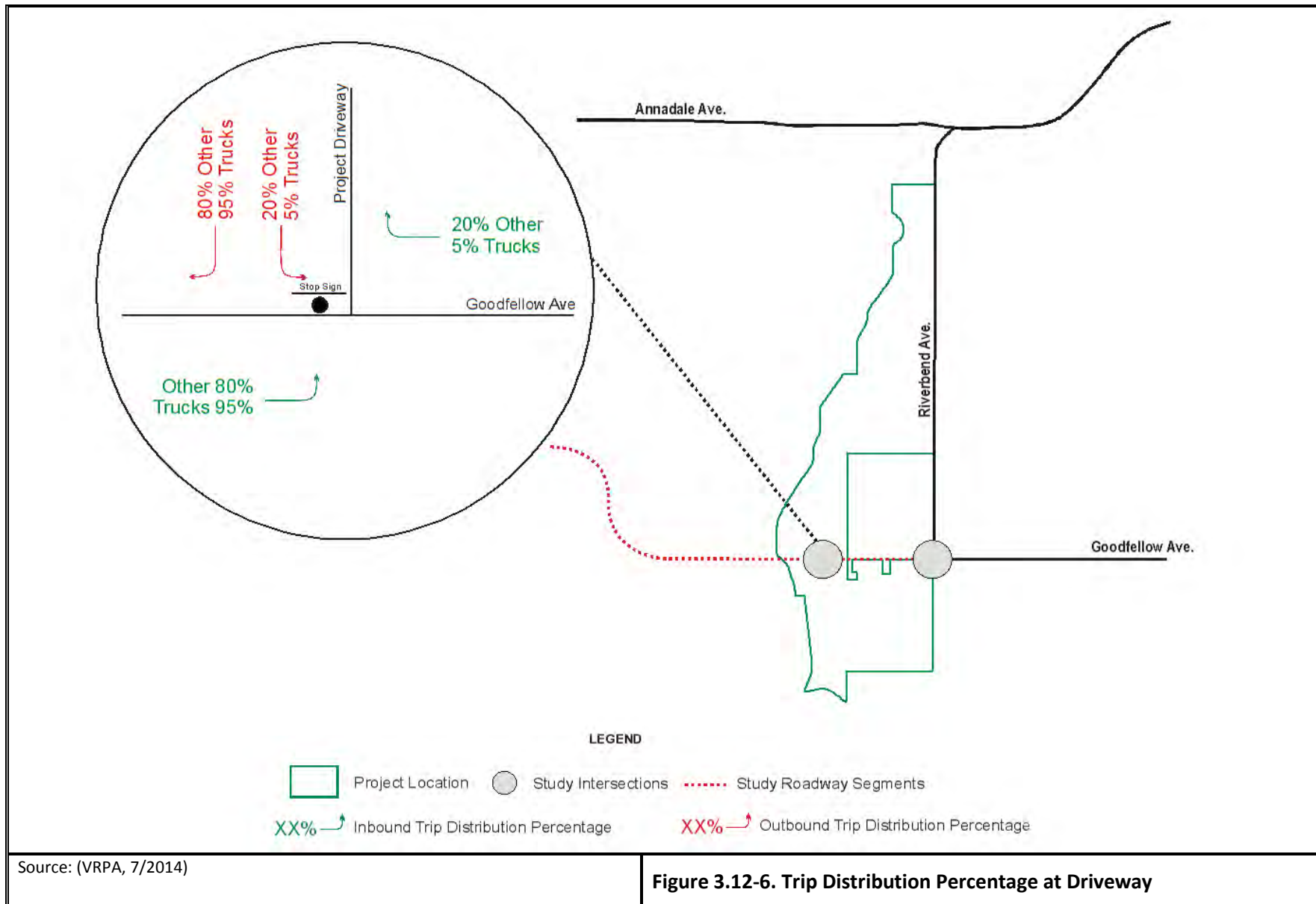
⁴ Employees, outside services, and miscellaneous visitors. Estimate of AM and PM peak hour trips and splits based on ITE Land Use 130 and Riverbend operations.

⁵ Project build-out. AM Peak: Aggregate trucks 50, asphalt trucks 40, ready-mix trucks 42, recycle trucks 6, liquid asphalt trucks 2, cement trucks 4, other trucks 2.

⁶ Passenger car equivalent of 2.5:1 was applied to truck trips.

Source: VRPA, 7/2014 (Appendix K).





Trip Distribution

To facilitate the estimation of trip distribution for this Project, Riverbend Sand and Gravel representatives were contacted by VRPA to obtain the truck trip distribution for the Project. The expected distribution is based on experience from aggregate industry professionals in the eastern Fresno County market area, estimated sales and projections, and the most direct and quickest routes to the product destinations within the eastern Fresno County market area.

Typically, Fresno Council of Governments (Fresno COG) would be contacted for the purpose of determining a Project's trip distribution. However, Fresno COG does not model mining or sand and gravel type project's since their trips are driven by sales/demand for the material. VRPA reviewed the Applicant's sales projections and corresponding trip distribution and believes that it is an accurate representation of the Project's trip distribution based upon the planned development within Fresno County and the surrounding area. VRPA staff also performed travel time runs for various truck routes in the Project study area to confirm the Project's trip distribution. Employee and other trips generated by the Project were distributed using engineering judgment, and typical operating hours of each plant. Trip distribution for Existing Plus Project, Existing Plus Project Plus Approved/Pending, Year 2015, 2017, 2019, and Cumulative Year 2035 conditions are shown in Figure 3.12-5 and Figure 3.12-6.

Project Traffic

Project traffic as shown in Table 3.12-8 was distributed to the roadway system using the trip distribution percentages shown in Figure 3.12-5 and Figure 3.12-6. A graphical representation of the resulting AM and PM peak hour Project trips used is shown in Figure 3.12-7 and Figure 3.12-8. The Project trips represented in Figure 3.12-7 and Figure 3.12-8 include the Passenger Car Equivalency (PCE) factor for Project truck trips as shown in Table 3.12-8.

Impact Analysis Scenarios

The capacity analysis for all analysis scenarios was performed assuming a PCE of 2.5:1 for all Project truck trips entering and exiting the facility, which is consistent with Caltrans staff recommendations. The PCE's are reflected in the figures and segment operations tables included in this analysis.

Existing Traffic Conditions

An Existing Scenario was analyzed to determine existing levels of traffic. Existing AM and PM peak hour turning movements were collected at each Project intersection by National Data and Surveying Services. Traffic counts were conducted for the peak hour periods of 7:00-9:00 AM and 4:00-6:00 PM for all key intersections on Tuesday, December 13, 2011. Traffic count data worksheets are provided in Appendix B. Seasonal adjustment factors for the count dates shown above were provided by Fresno County staff. For Tuesday, December 13, 2011, the season adjustment factor is 0.96. As a result, seasonal adjustment factors were not applied to the counts because applying the factors to the counts would result in lower intersection and segment volumes. Traffic counts were also conducted on January 30, 2014 at SR 180 and Highland Avenue and SR 180 and De Wolf Avenue for the purposes of determining segment impacts along SR 180 between Highland Avenue and Temperance Avenue.

Existing Plus Project Traffic Conditions

An Existing Plus Project Scenario was analyzed to include existing traffic plus traffic generated by the Project. The resulting traffic is shown in Figure 3.12-9 and Figure 3.12-10. (Note: The Project will not be operational until 2015.)

Existing Plus Approved/Pending Traffic Conditions

Traffic impact analyses typically require the analysis of approved/pending projects in addition to the proposed Project. Approved/pending projects included in this analysis include the operating Vulcan Materials project located off of SR 180 east of Centerville, the approved but not currently operating Carmelita Mine & Reclamation project located just west of Reed Avenue between Annadale Avenue and Goodfellow Avenue, and the approved Calaveras Materials Inc. (CMI) Kings River Sand and Gravel project located south of Goodfellow Avenue and east of Riverbend Avenue. CMI has started on-site operations and began generating truck traffic from the site in February of 2014. Trip generation and distribution information for the approved/pending projects was based on information found in their corresponding TIS reports. Trip generation and distribution information are provided in Appendix F of the TIS (DEIR Appendix K). Figure 3.12-11 shows the locations of the approved/pending projects with respect to the Project. Figure 3.12-12 and Figure 3.12-13 show the AM and PM peak hour trips for approved/pending project traffic.

The PCE factors used in the respective TIS's for the approved/pending projects are reflected in the Existing Plus Approved/Pending scenario, the Existing Plus Project Plus Approved/Pending scenario and the Year 2015, 2017, 2019, and Cumulative 2035 No Project and Plus Project Scenarios.

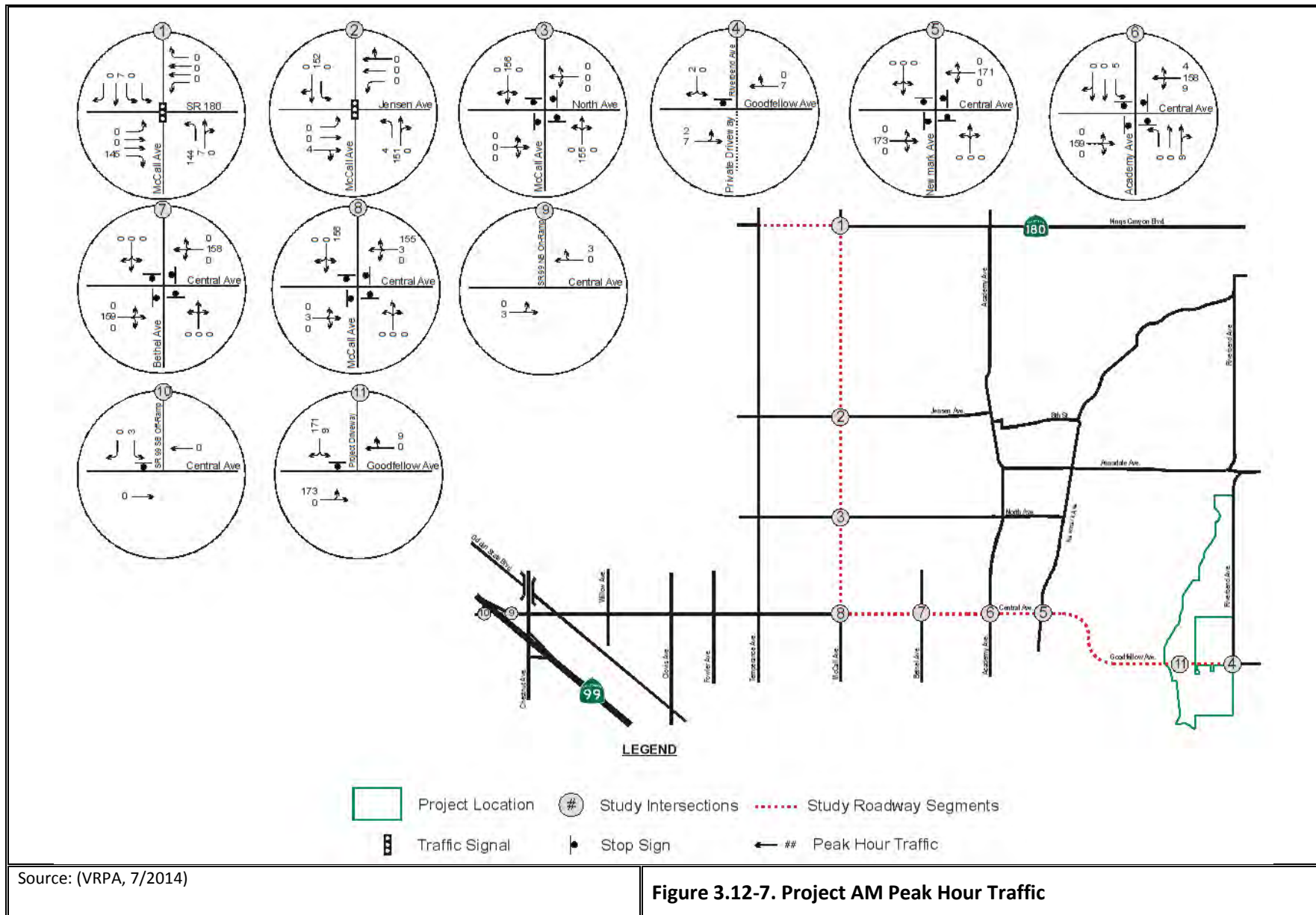
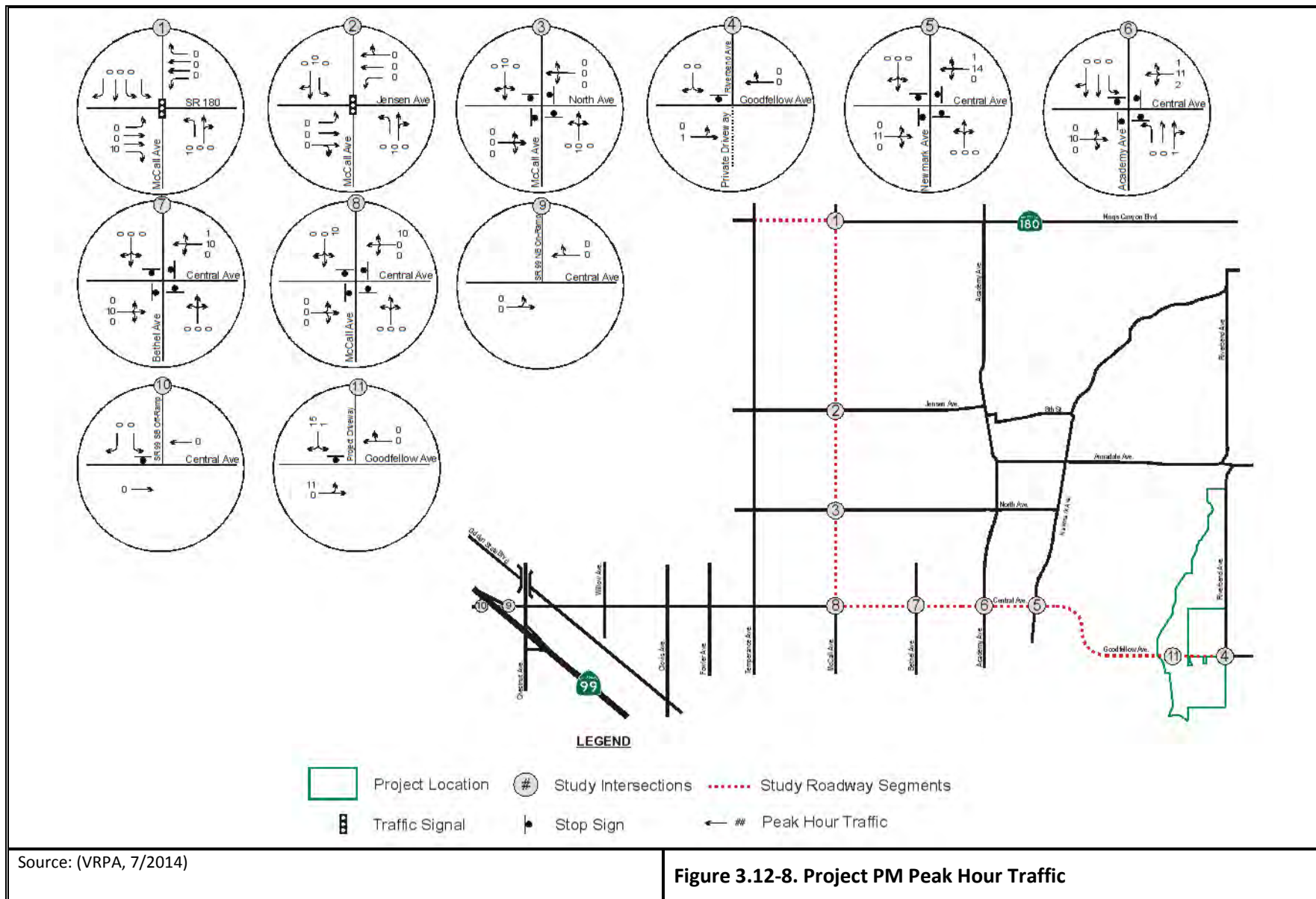


Figure 3.12-7. Project AM Peak Hour Traffic



Source: (VRPA, 7/2014)

Figure 3.12-8. Project PM Peak Hour Traffic

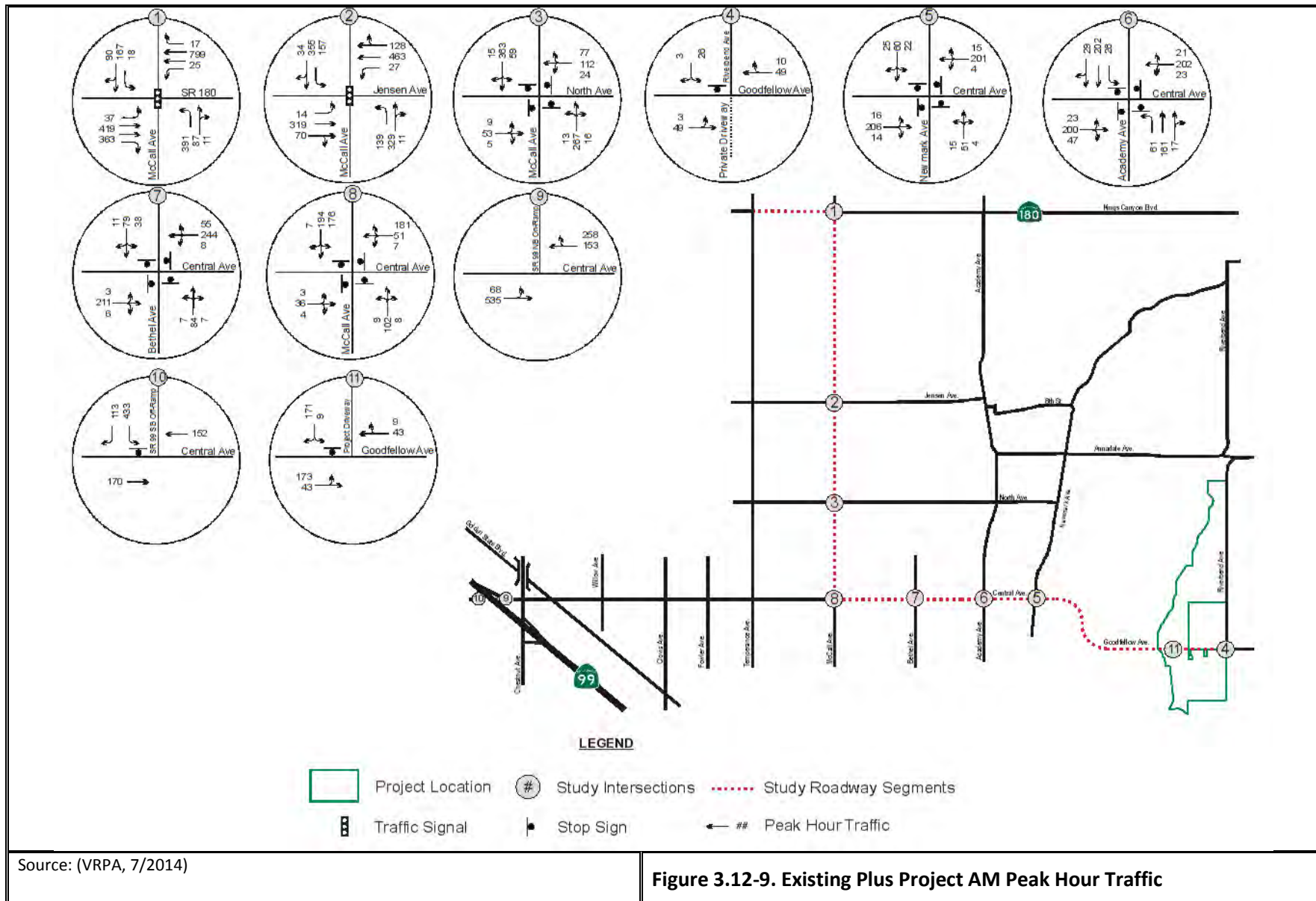


Figure 3.12-9. Existing Plus Project AM Peak Hour Traffic

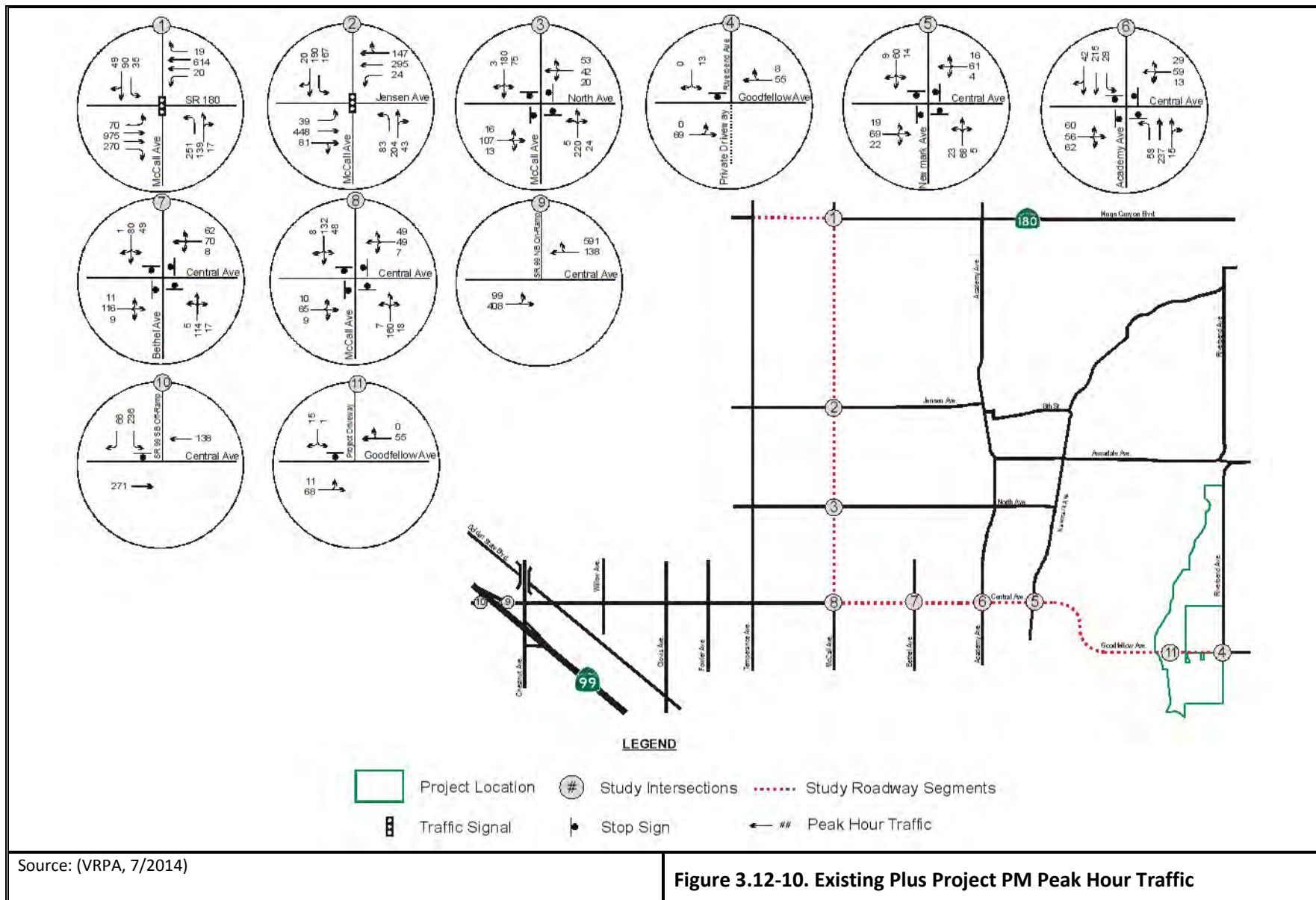
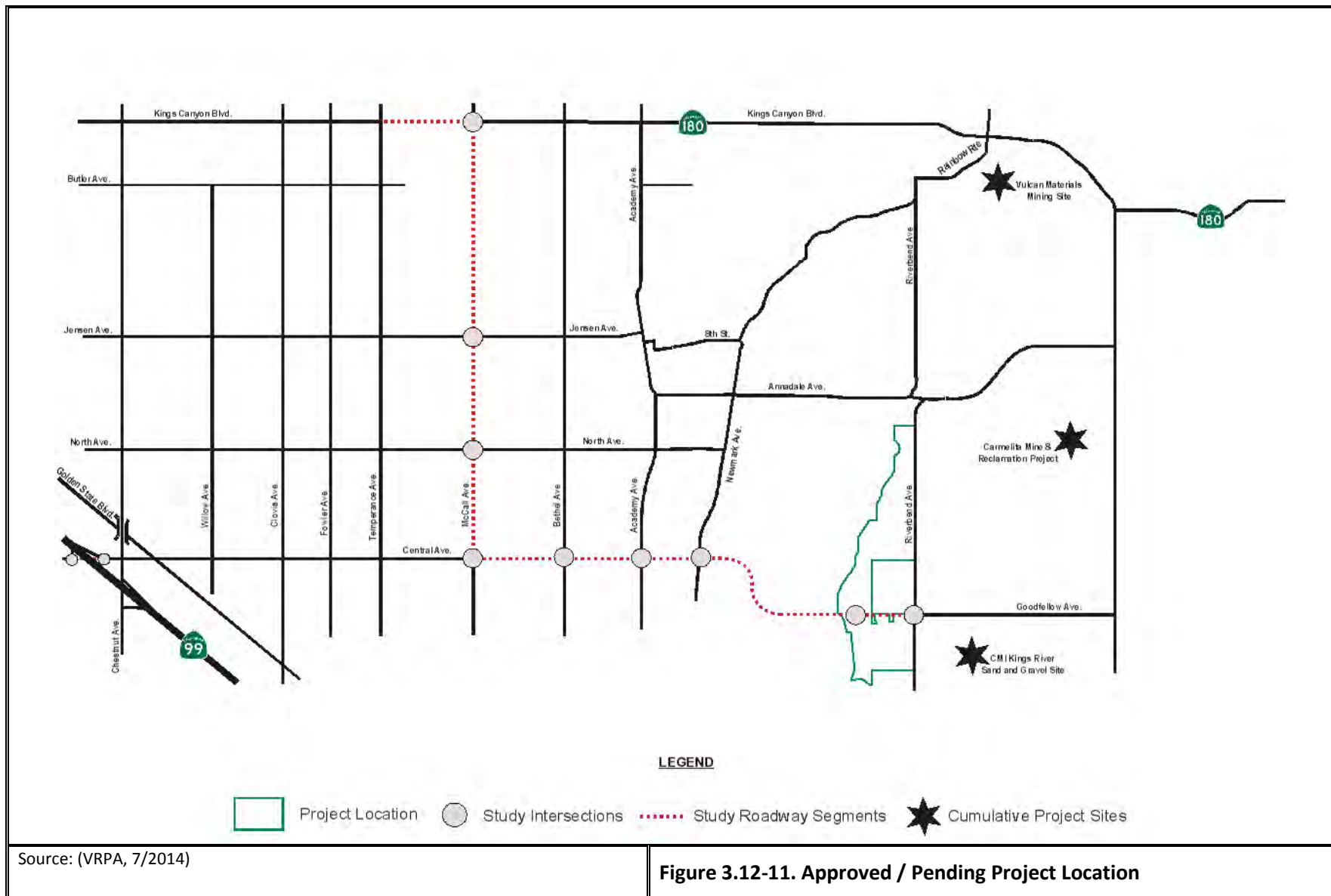
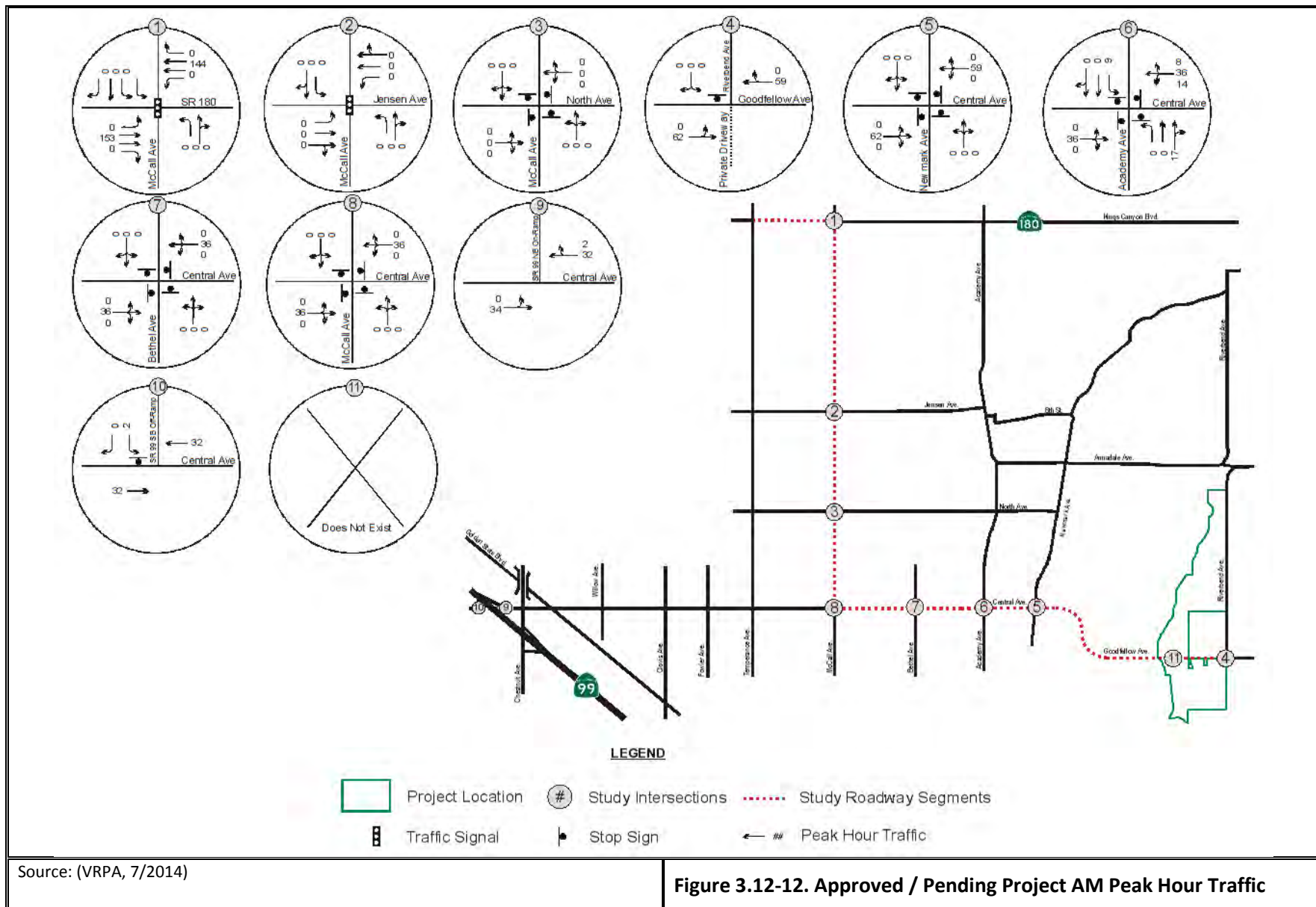


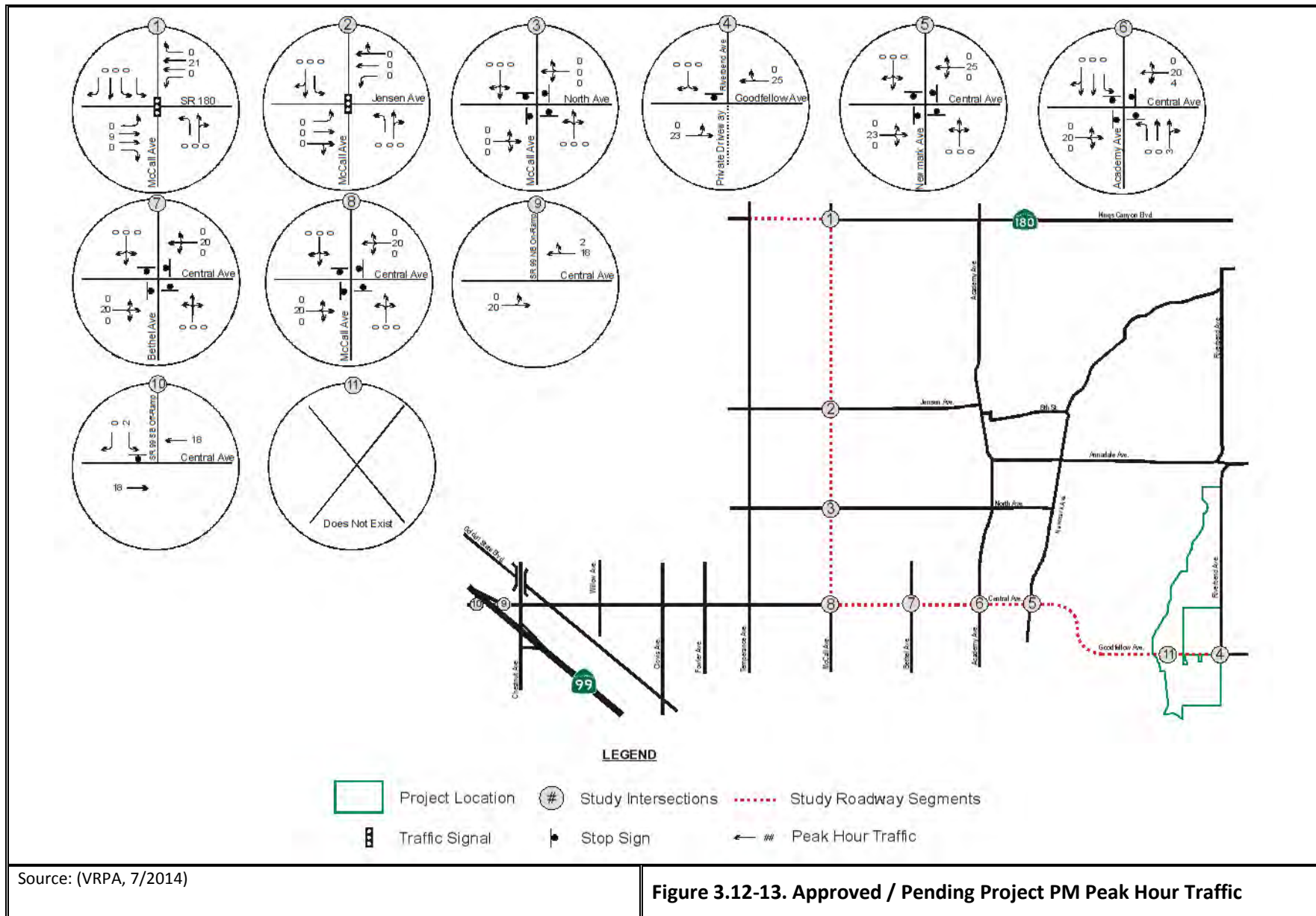
Figure 3.12-10. Existing Plus Project PM Peak Hour Traffic





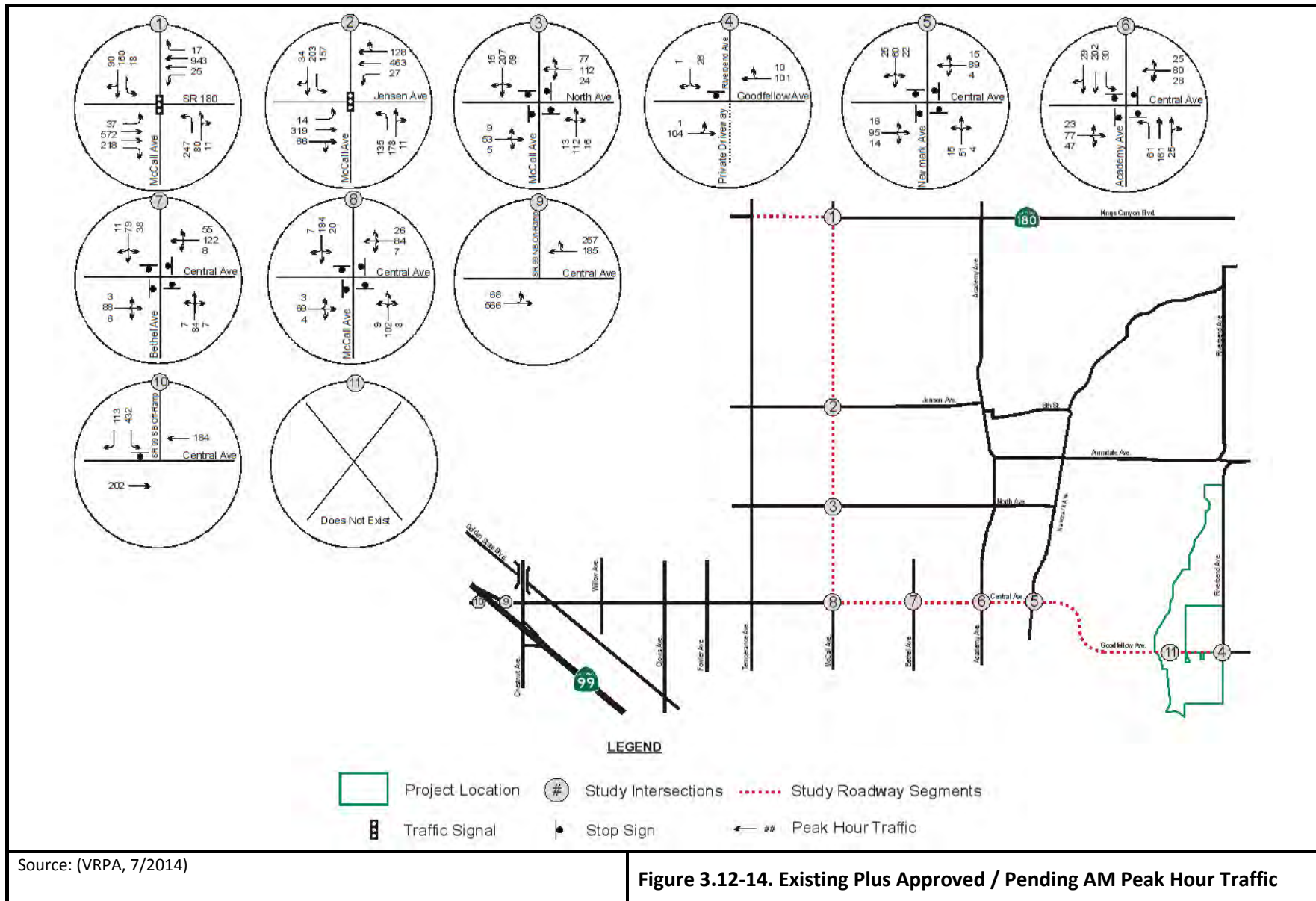
Source: (VRPA, 7/2014)

Figure 3.12-12. Approved / Pending Project AM Peak Hour Traffic



Source: (VRPA, 7/2014)

Figure 3.12-13. Approved / Pending Project PM Peak Hour Traffic

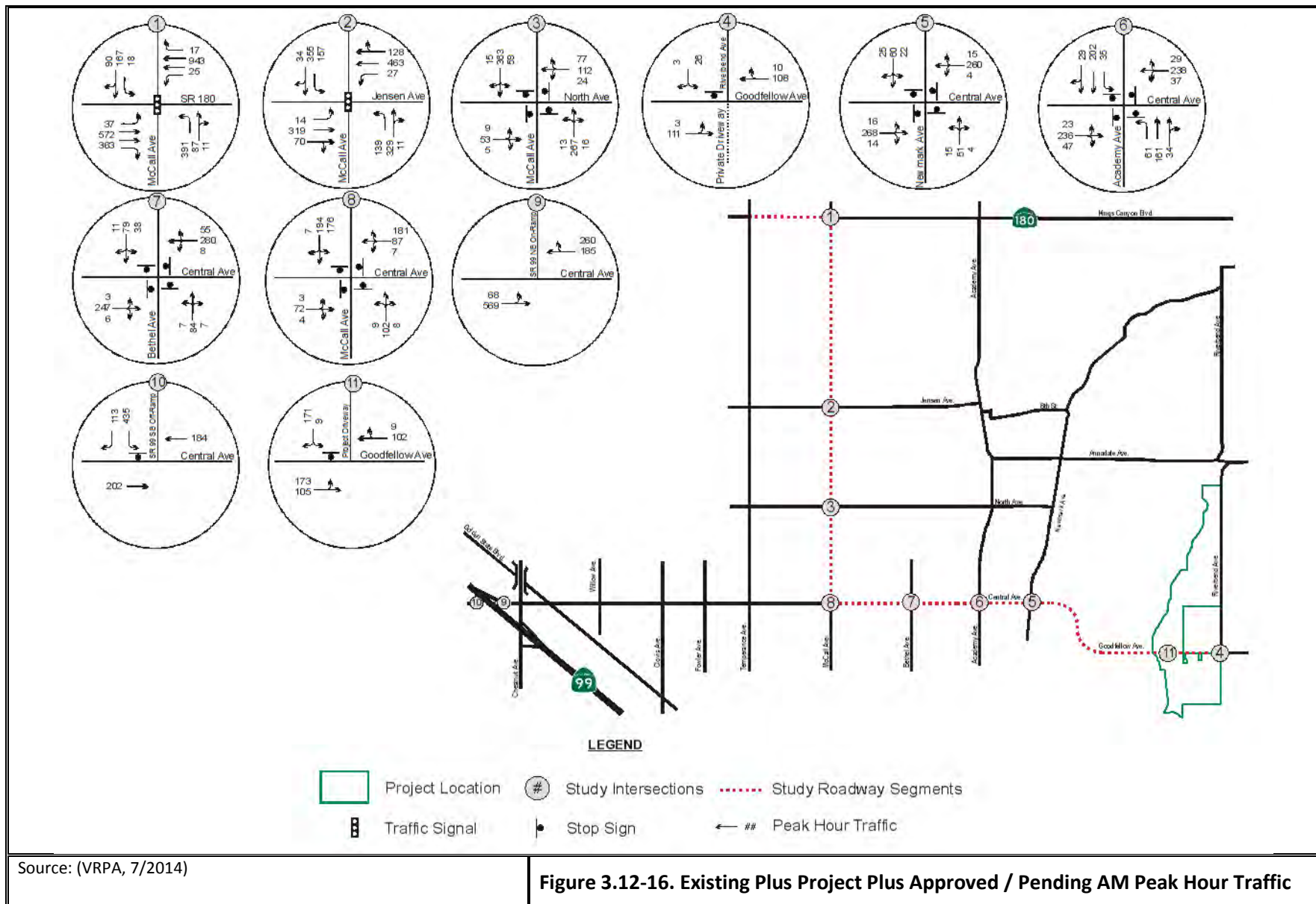


Source: (VRPA, 7/2014)

Figure 3.12-14. Existing Plus Approved / Pending AM Peak Hour Traffic



Figure 3.12-15. Existing Plus Approved / Pending PM Peak Hour Traffic



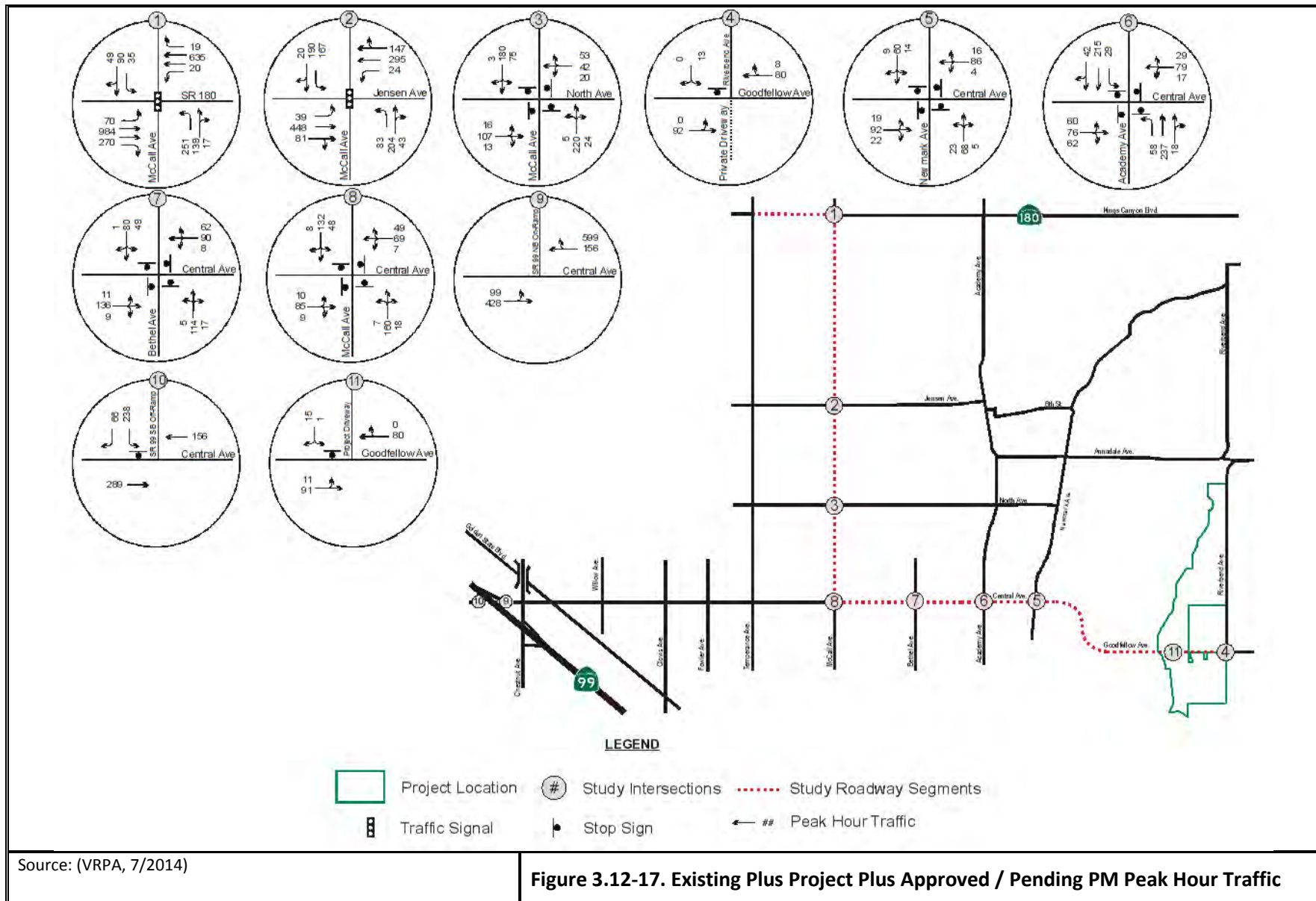


Figure 3.12-17. Existing Plus Project Plus Approved / Pending PM Peak Hour Traffic

An Existing Plus Approved/Pending Scenario was analyzed to include existing traffic plus traffic generated by the approved/pending projects analyzed in this TIS. The resulting traffic is shown in Figure 3.12-14 and Figure 3.12-15.

Existing Plus Project Plus Approved/Pending Conditions

An Existing Plus Project Plus Approved/Pending Scenario was analyzed to include existing traffic plus traffic generated by the Project and traffic generated by approved/pending projects. The resulting traffic is shown in Figure 3.12-16 and Figure 3.12-17.

Year 2015 No Project

It was assumed that the Project would not start operations sooner than the Year 2015. Traffic conditions without the Project in the Year 2015 were estimated by utilizing the incremental method and the TurnsW32 program. Interpolating between the existing and 2035 segment volumes of the regional travel models determined the 2015 street segment volumes. The TurnsW32 program calculated the forecasted turning movement volumes for the year 2015 by utilizing these 2015 segment volumes along with the existing traffic volumes for all turning movements. TurnsW32 worksheets are provided in Appendix G of the TIS (DEIR Appendix K). The resulting traffic is shown in Figure 3.12-18 and Figure 3.12-19.

Year 2015 Plus Phase 1 Conditions

Phase 1 Project trips were added to forecasted 2015 traffic conditions and analyzed in the Phase 1 traffic conditions scenario. The resulting traffic is shown in Figure 3.12-20 and Figure 3.12-21.

Year 2017 No Project

Traffic conditions without the Project in the Year 2017 were estimated by utilizing the incremental method and the TurnsW32 program. Interpolating between the existing and 2035 segment volumes of the regional travel models determined the 2017 street segment volumes. The TurnsW32 program calculated the forecasted turning movement volumes for the year 2017 by utilizing these 2017 segment volumes along with the existing traffic volumes for all turning movements. The resulting traffic is shown in Figure 3.12-22 and Figure 3.12-23.

Year 2017 Plus Phase 2 Conditions

Phase 2 Project trips were added to forecasted 2017 traffic conditions and analyzed in the Phase 2 traffic conditions scenario. The resulting traffic is shown in Figure 3.12-24 and Figure 3.12-25.

Year 2019 No Project Conditions

Traffic conditions without the Project in the Year 2019 were estimated by utilizing the incremental method and the TurnsW32 program. Interpolating between the existing and 2035 segment volumes of

the regional travel models determined the 2019 street segment volumes. The TurnsW32 program calculated the forecasted turning movement volumes for the year 2019 by utilizing these 2019 segment volumes along with the existing traffic volumes for all turning movements. The resulting traffic is shown in Figure 3.12-26 and Figure 3.12-27.

Year 2019 Plus Phase 3 Conditions

Phase 3 Project trips were added to forecasted 2019 traffic conditions and analyzed in the Phase 3 traffic conditions scenario. The resulting traffic is shown in Figure 3.12-28 and Figure 3.12-29.

Cumulative Year 2035 No Project Traffic Conditions

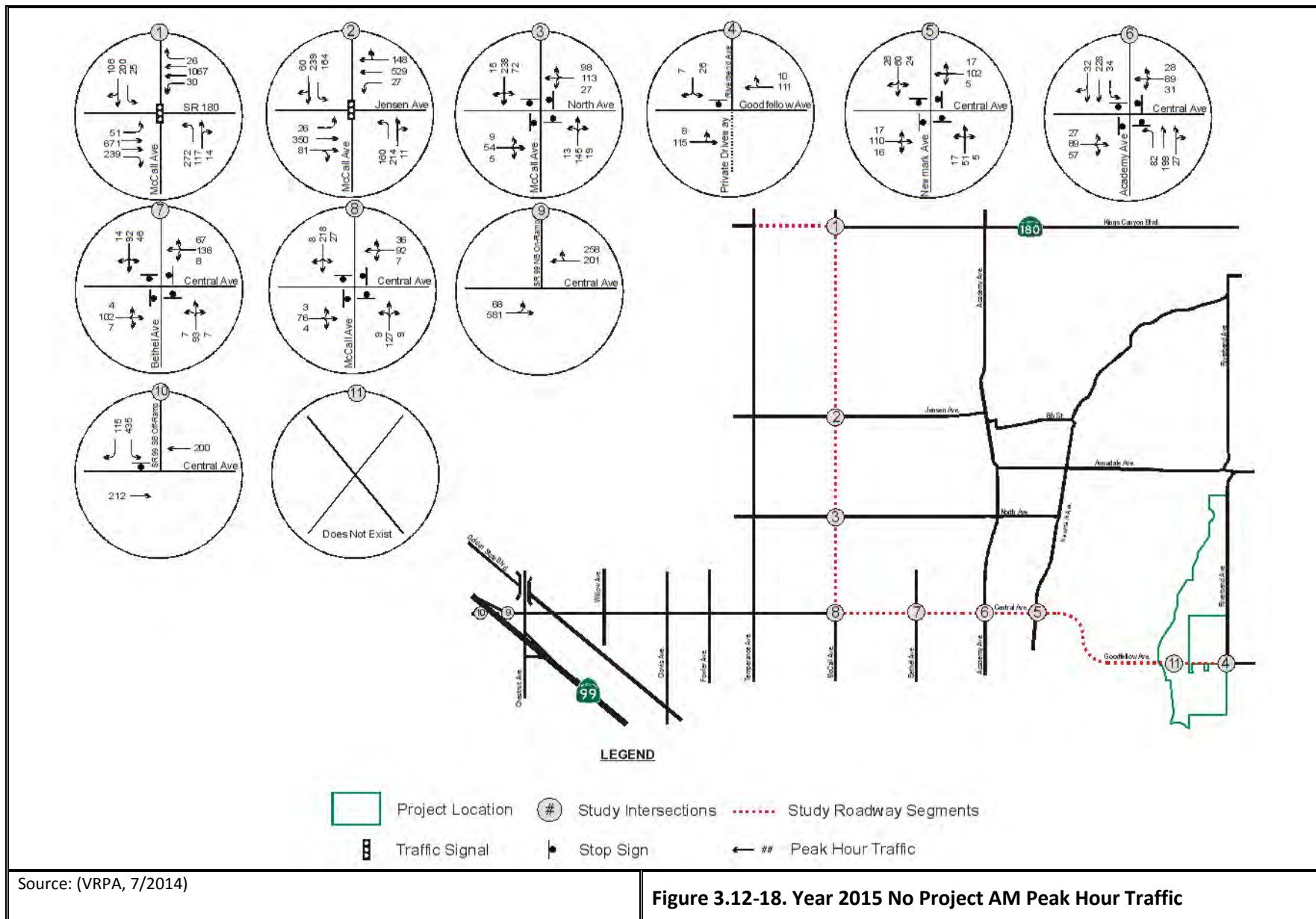
The impacts of the Project were analyzed considering future traffic conditions, approximately twenty years after the assumed opening day of the Project, or in this case the year 2035. The levels of traffic expected in 2035 relate to the cumulative effect of traffic increases resulting from the implementation of the General Plans of local agencies, including the City of Fresno and Fresno County. Traffic conditions without the Project in the Year 2035 were estimated using the Fresno COG regional travel model. Future traffic forecasts along study area roadway segments were estimated by utilizing methodologies published by Fresno COG using the TurnsW32 program. This process can be summarized as follows:

- The Fresno COG model for the year 2011 and 2035 was used to estimate the future traffic forecasts for study area roadway segments.
- Existing AM and PM peak hour turning movements and the adjusted 2035 roadway segment traffic forecasts were input to the TurnsW32 program and the program calculated 2035 AM and PM peak hour turning movements, as described in Fresno COG guidelines for determining future year turning movement forecasts (Incremental Method).

For reference, the Fresno COG model outputs are provided in Appendix H of the TIS located in Appendix K of this DEIR. Traffic conditions resulting from this scenario are shown in Figure 3.12-30 and Figure 3.12-31.

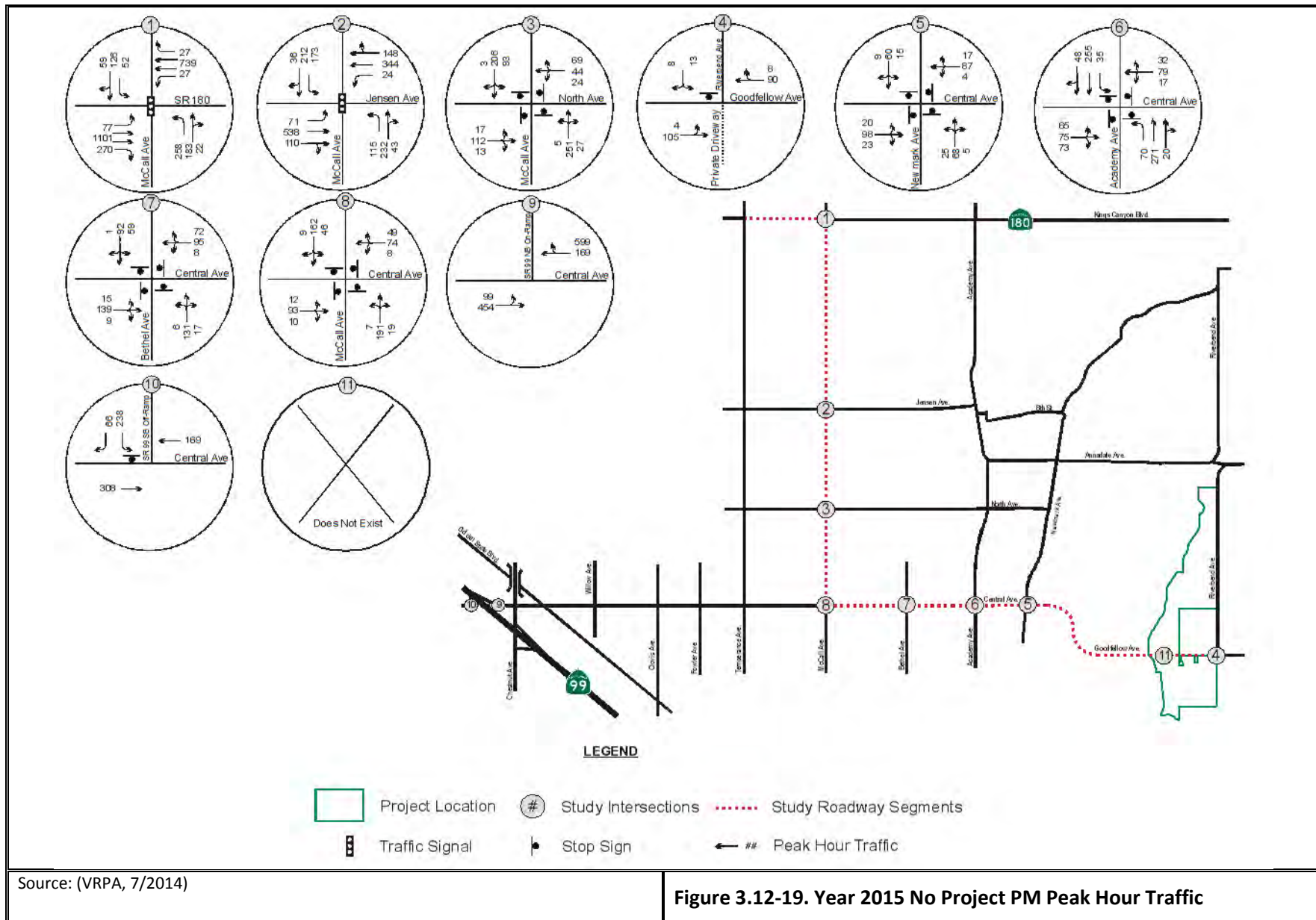
Cumulative Year 2035 Plus Project Conditions

The addition of Project trips, which were distributed to the roadway system using the trip distribution percentages shown in Figures 3-1 and 3-2 (Section 3.3), were added to Cumulative 2035 without Project traffic volumes. This leads to the results shown in Figure 3.12-32 and Figure 3.12-33.



Source: (VRPA, 7/2014)

Figure 3.12-18. Year 2015 No Project AM Peak Hour Traffic



Source: (VRPA, 7/2014)

Figure 3.12-19. Year 2015 No Project PM Peak Hour Traffic

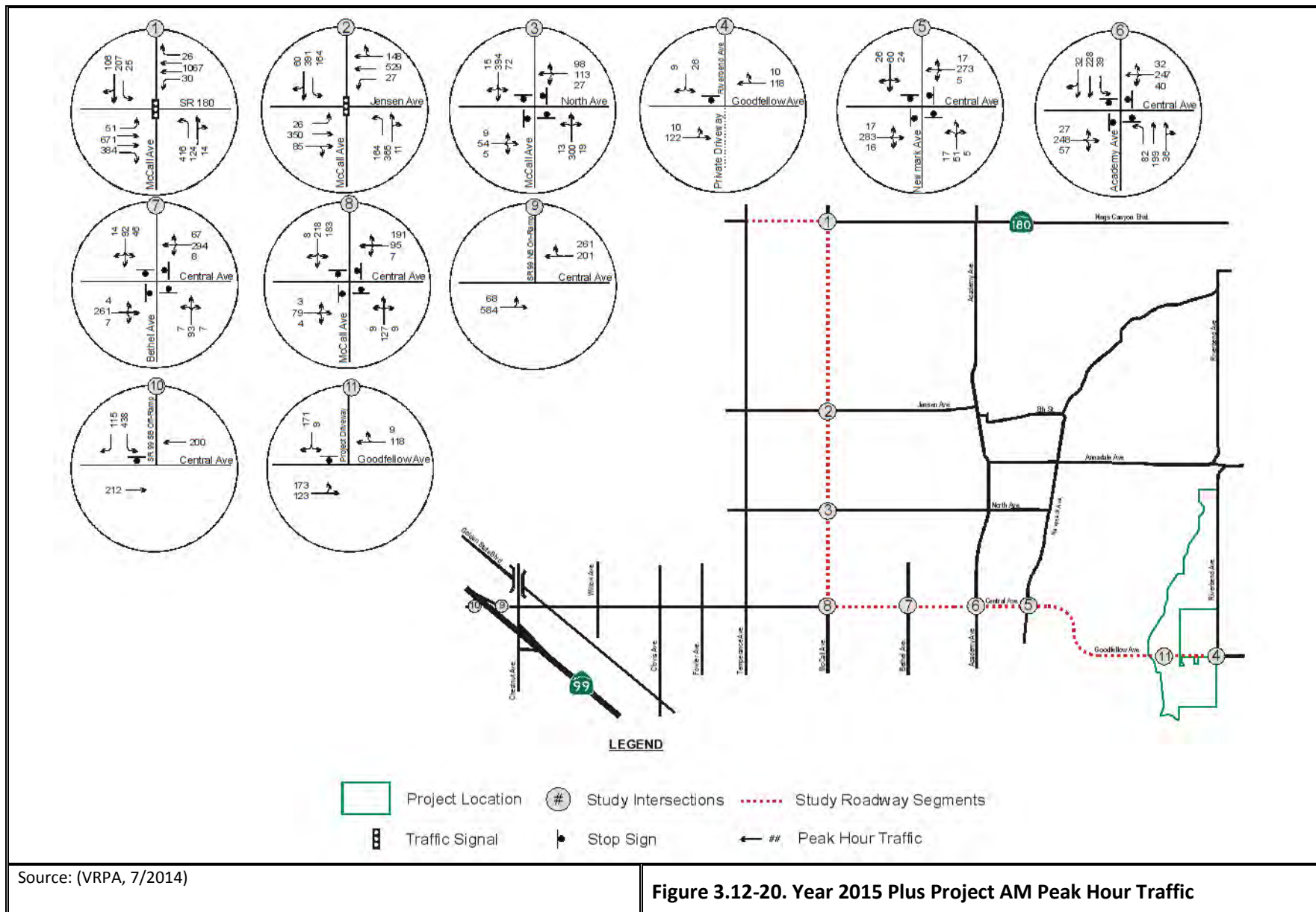


Figure 3.12-20. Year 2015 Plus Project AM Peak Hour Traffic

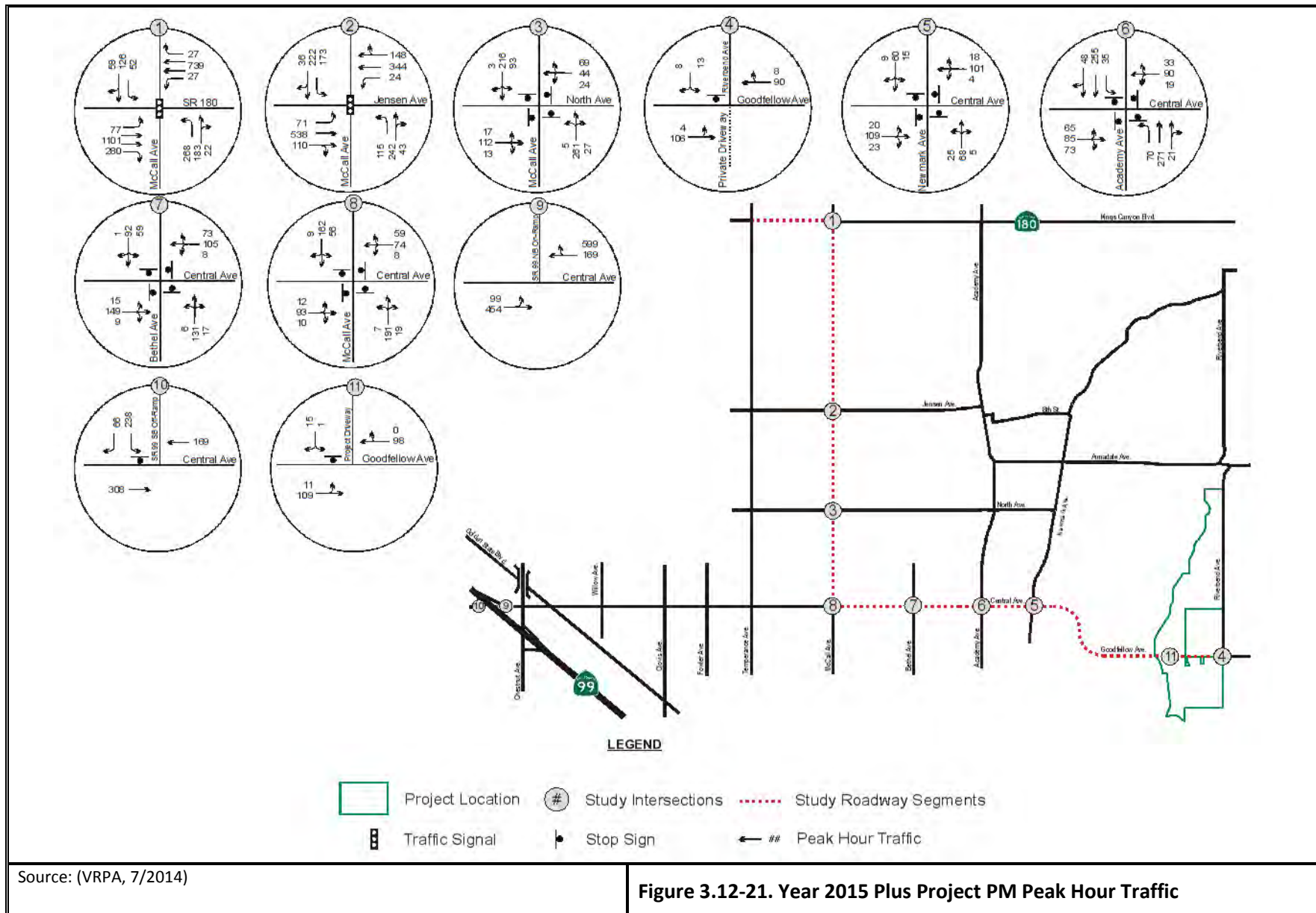


Figure 3.12-21. Year 2015 Plus Project PM Peak Hour Traffic

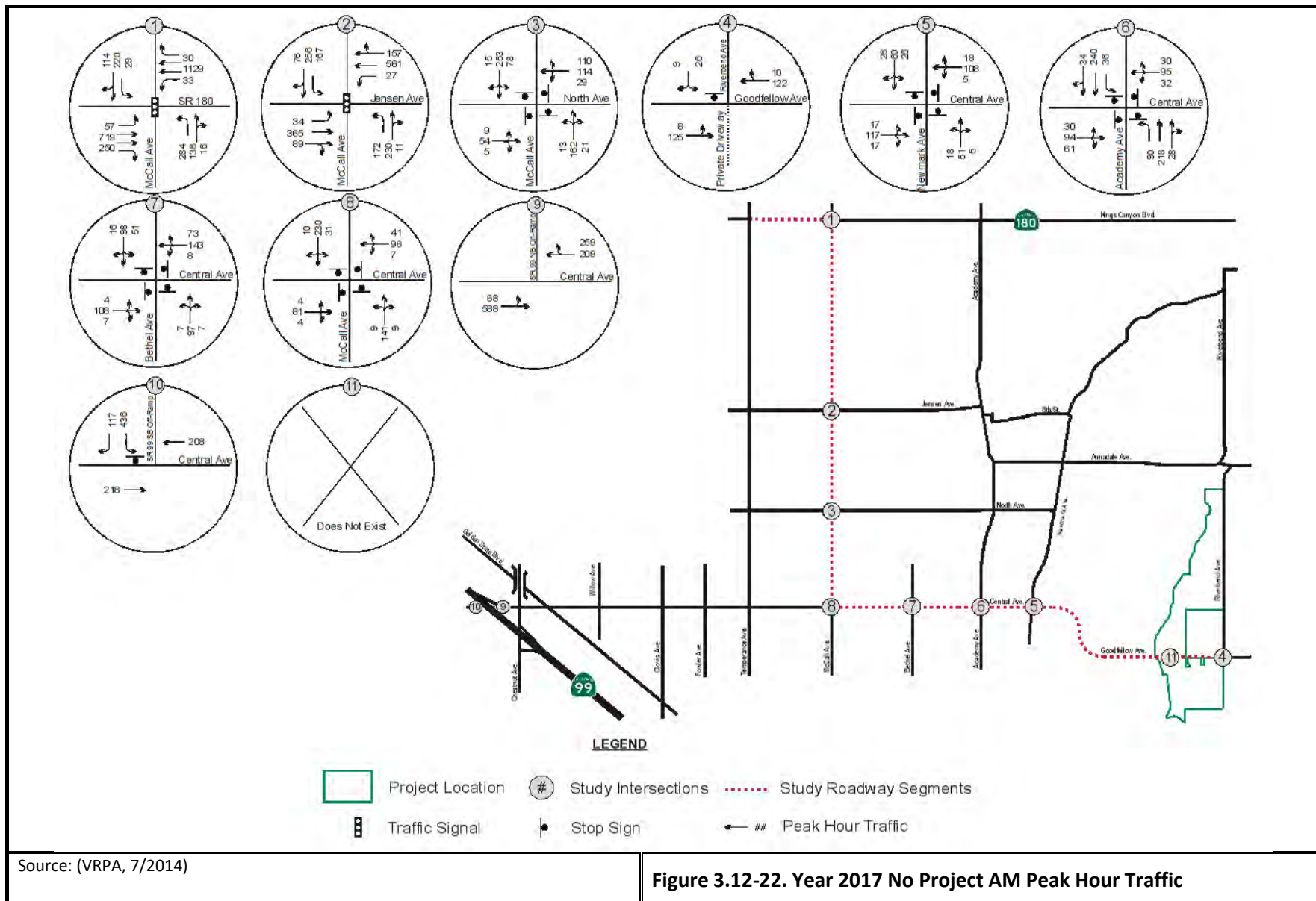
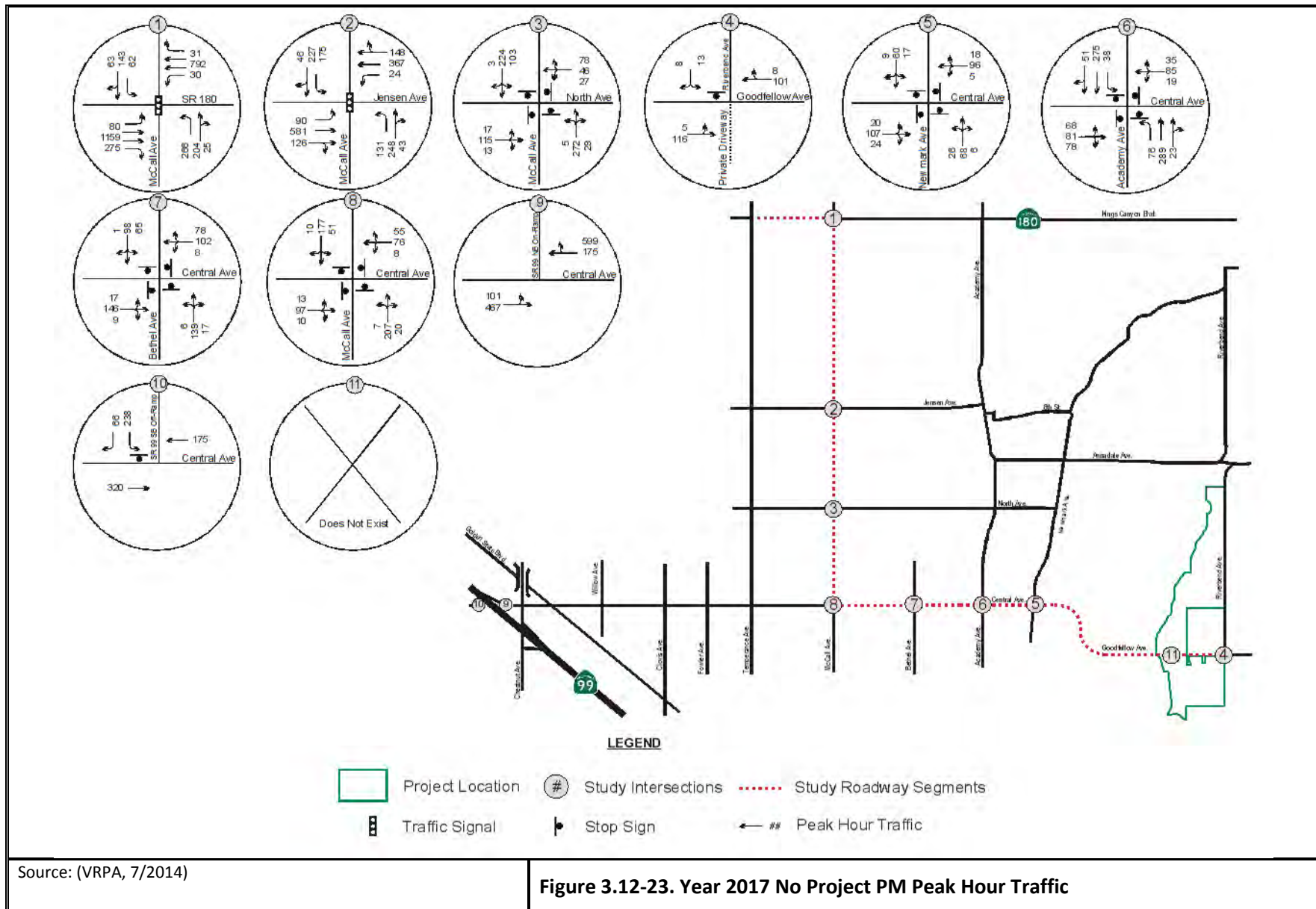
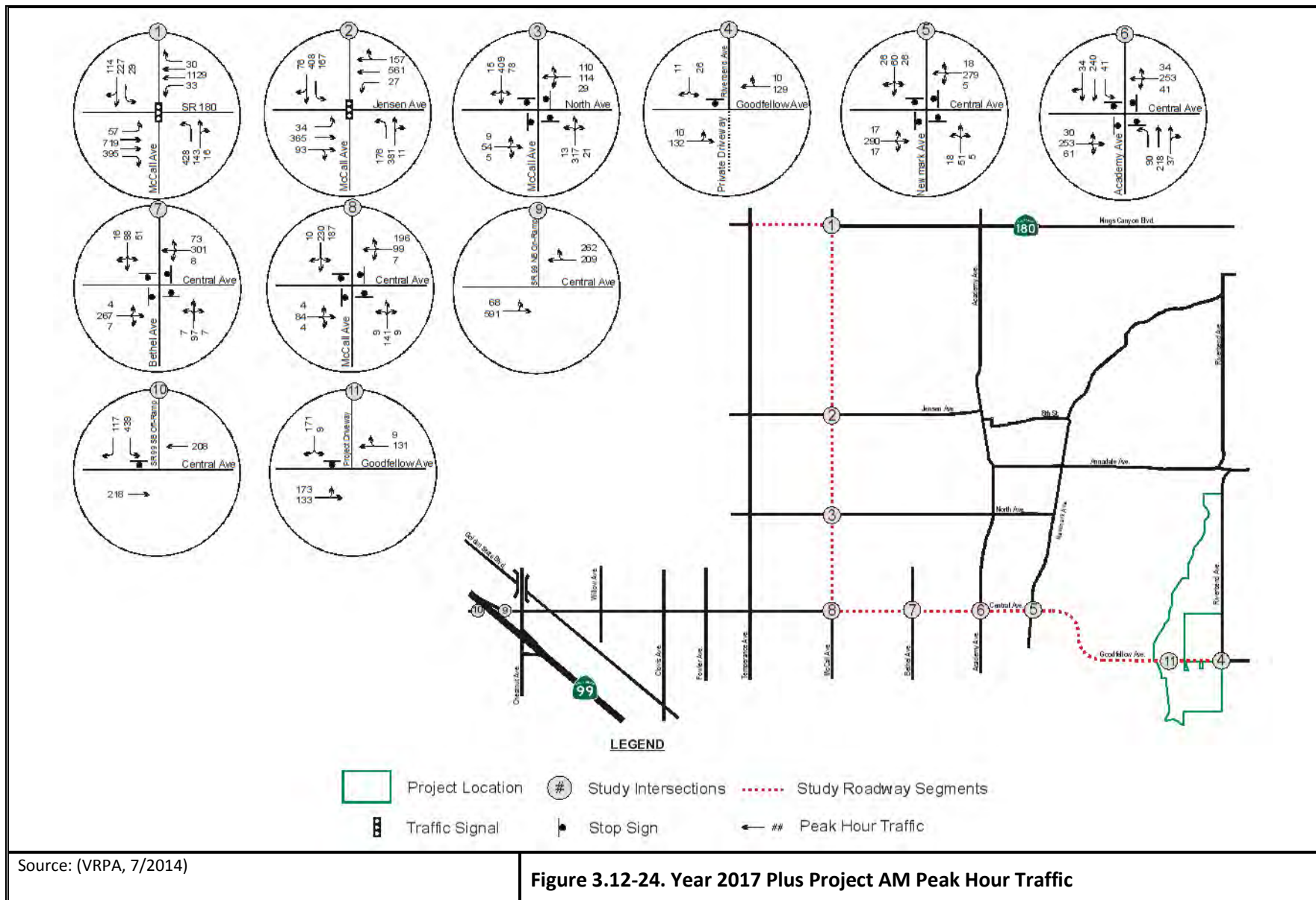


Figure 3.12-22. Year 2017 No Project AM Peak Hour Traffic



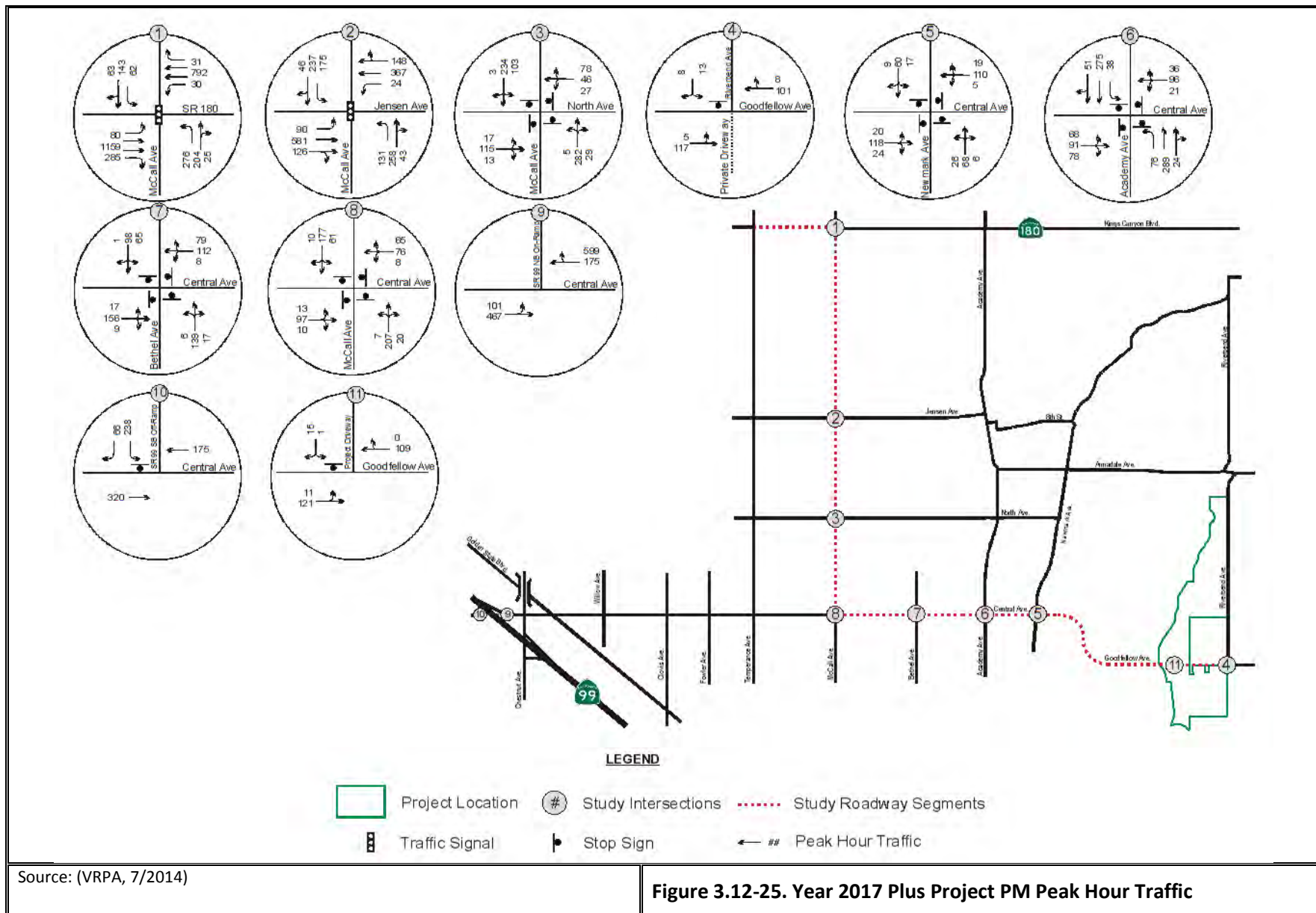
Source: (VRPA, 7/2014)

Figure 3.12-23. Year 2017 No Project PM Peak Hour Traffic



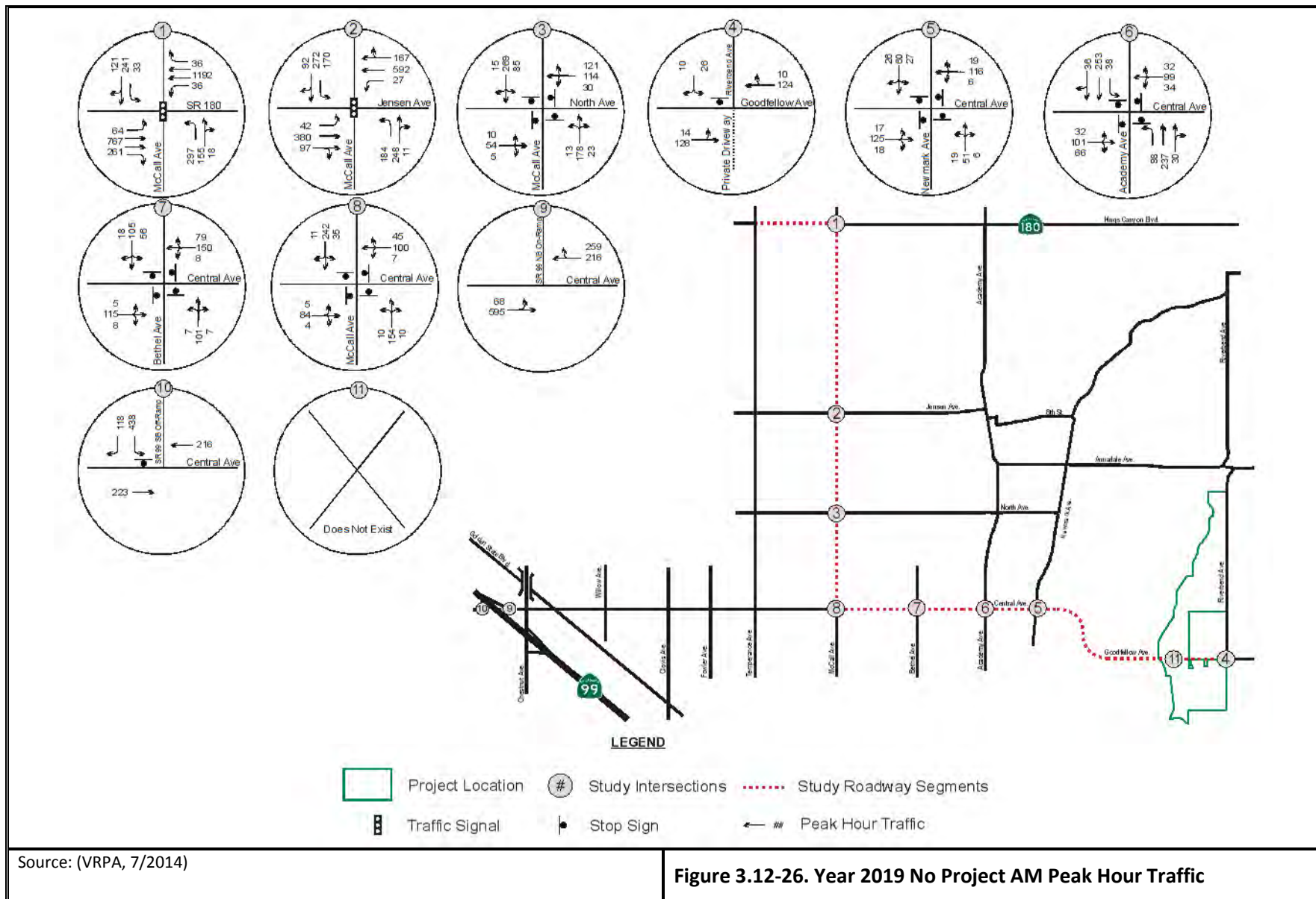
Source: (VRPA, 7/2014)

Figure 3.12-24. Year 2017 Plus Project AM Peak Hour Traffic



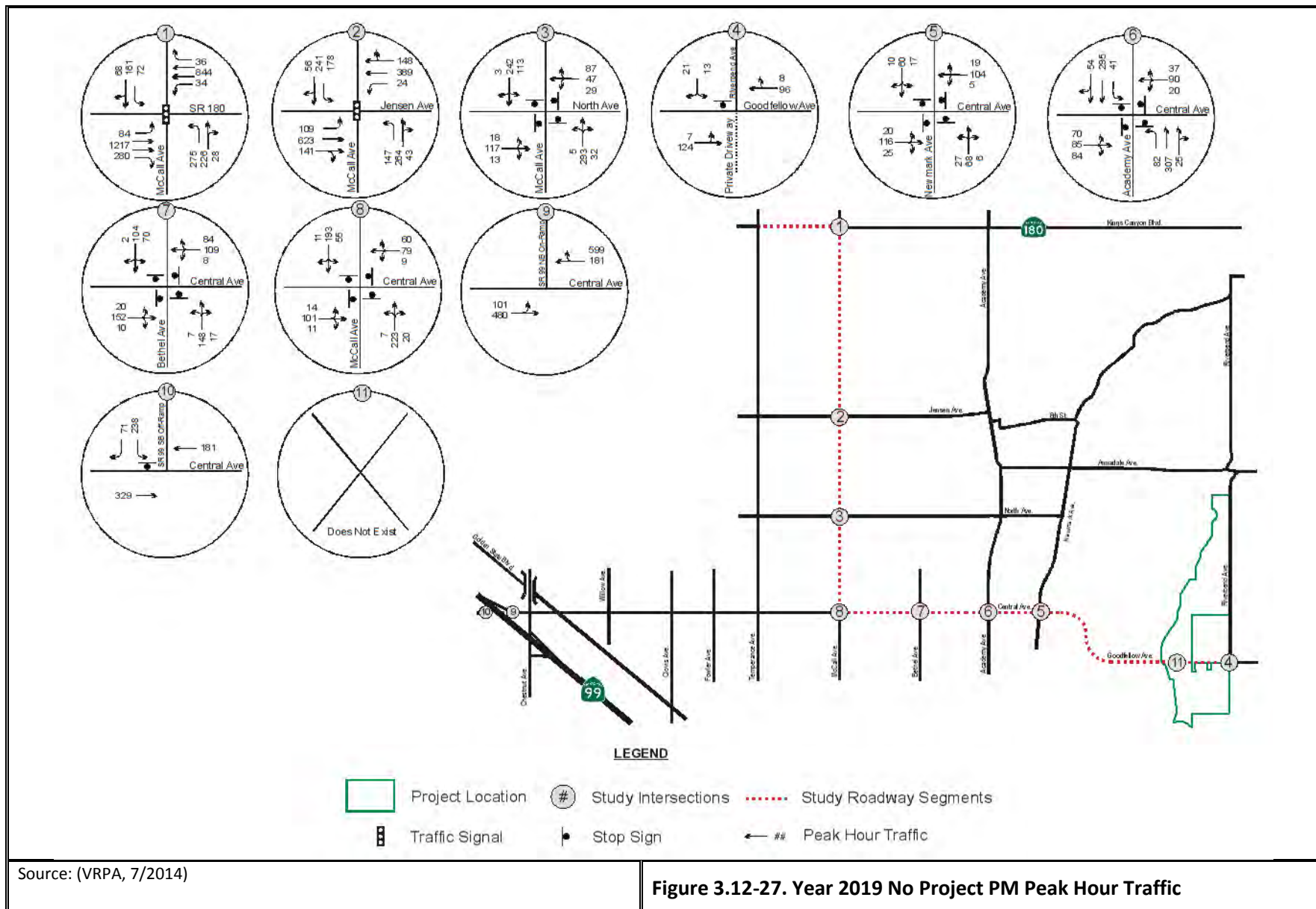
Source: (VRPA, 7/2014)

Figure 3.12-25. Year 2017 Plus Project PM Peak Hour Traffic



Source: (VRPA, 7/2014)

Figure 3.12-26. Year 2019 No Project AM Peak Hour Traffic



Source: (VRPA, 7/2014)

Figure 3.12-27. Year 2019 No Project PM Peak Hour Traffic

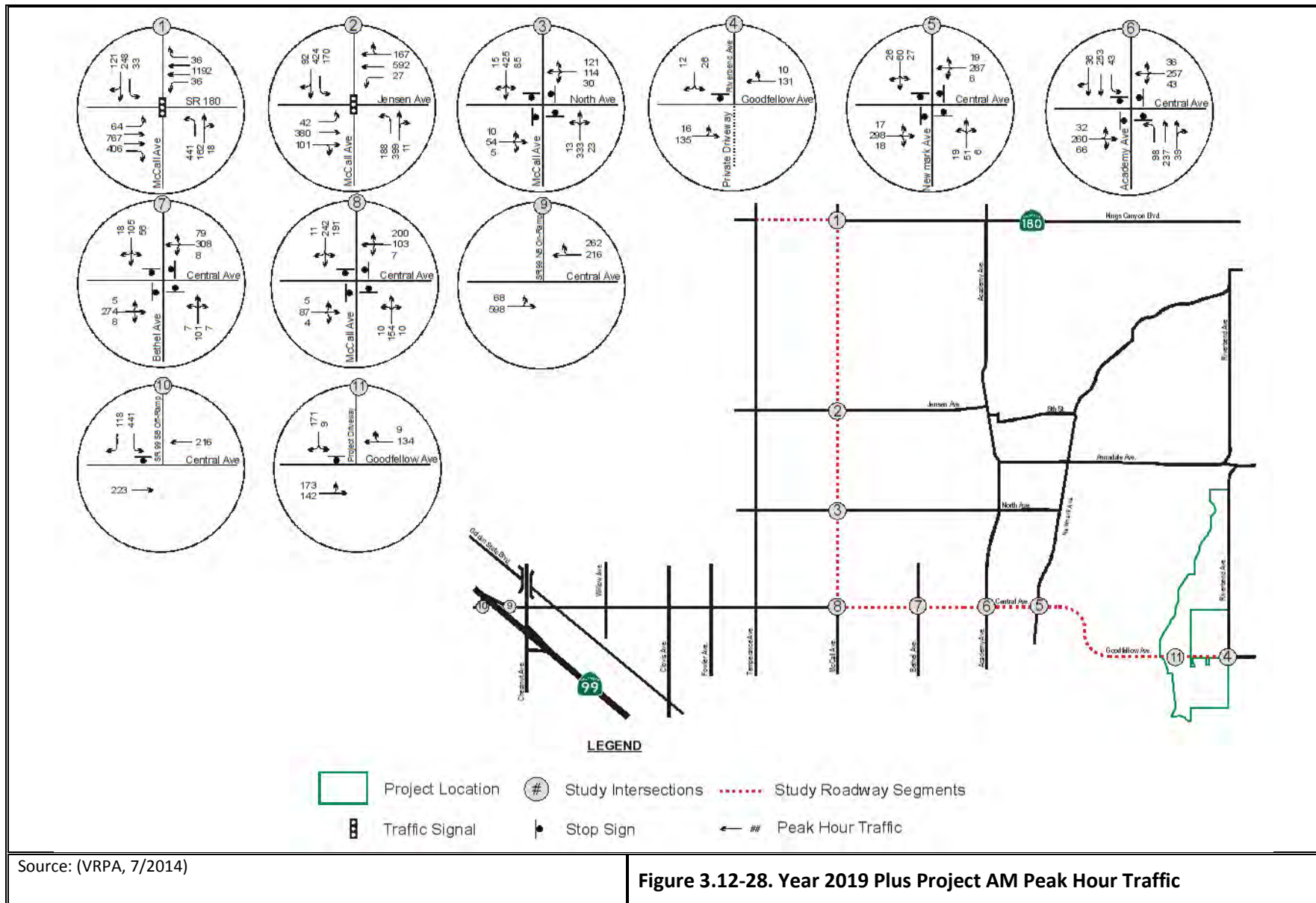
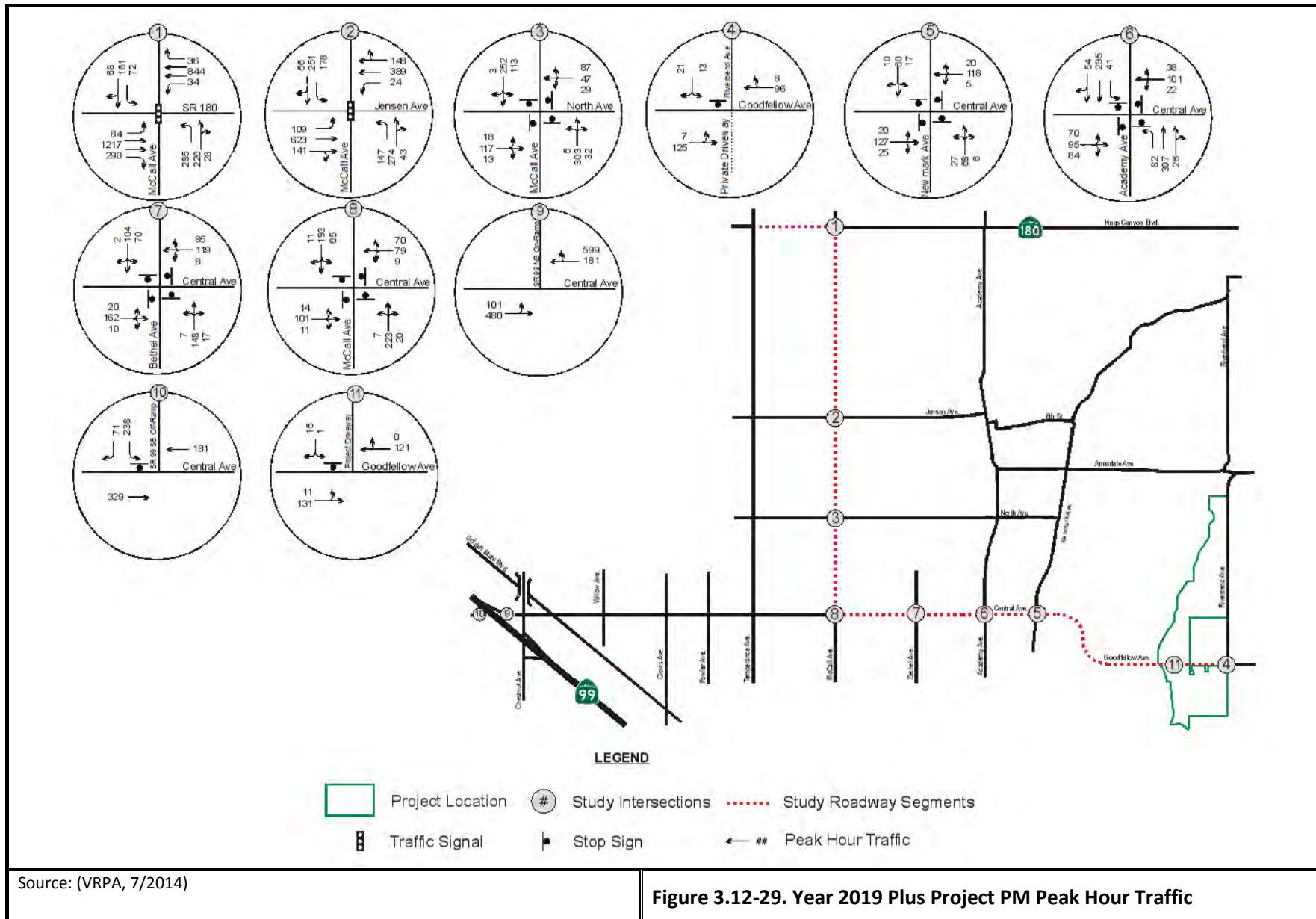
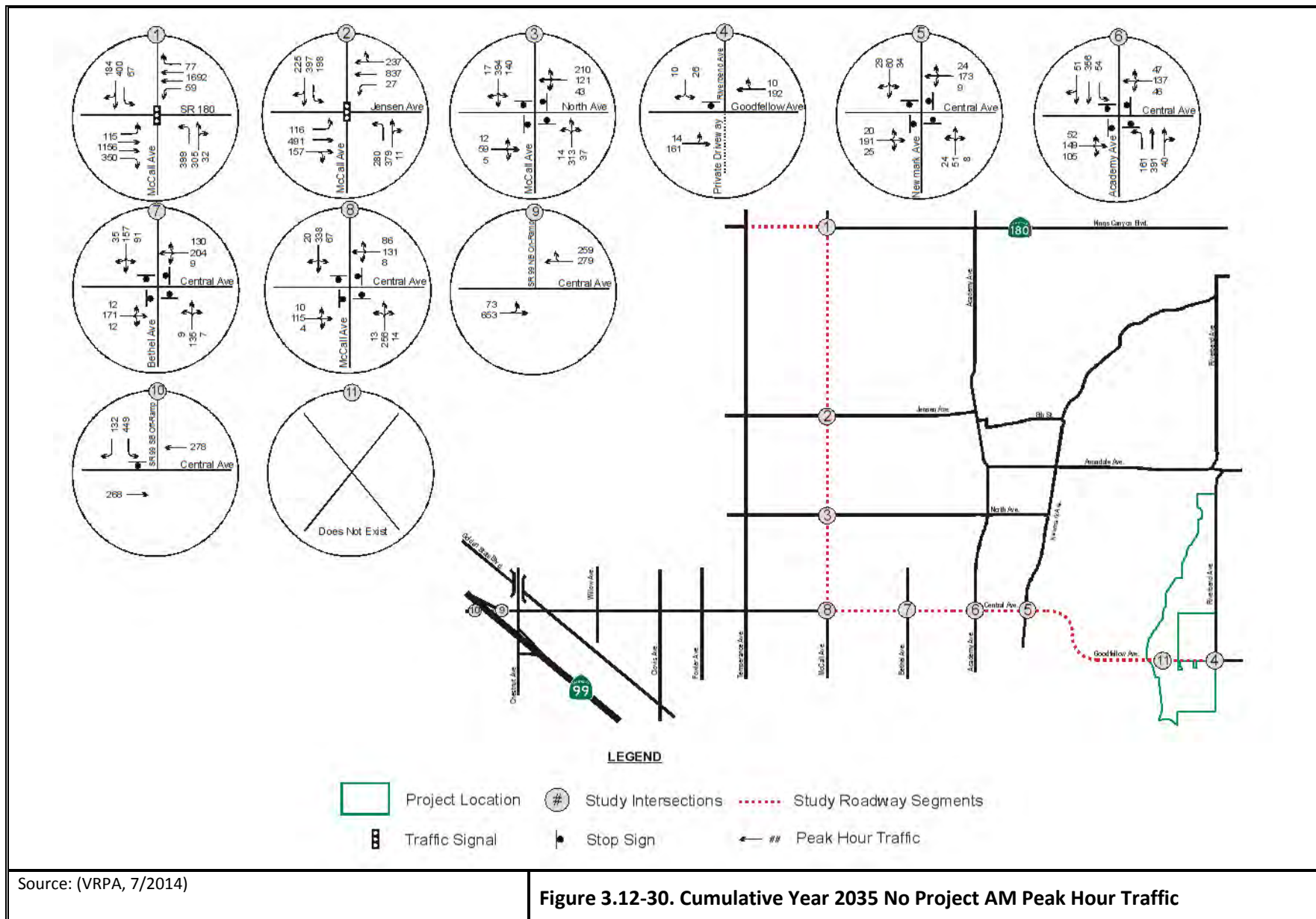


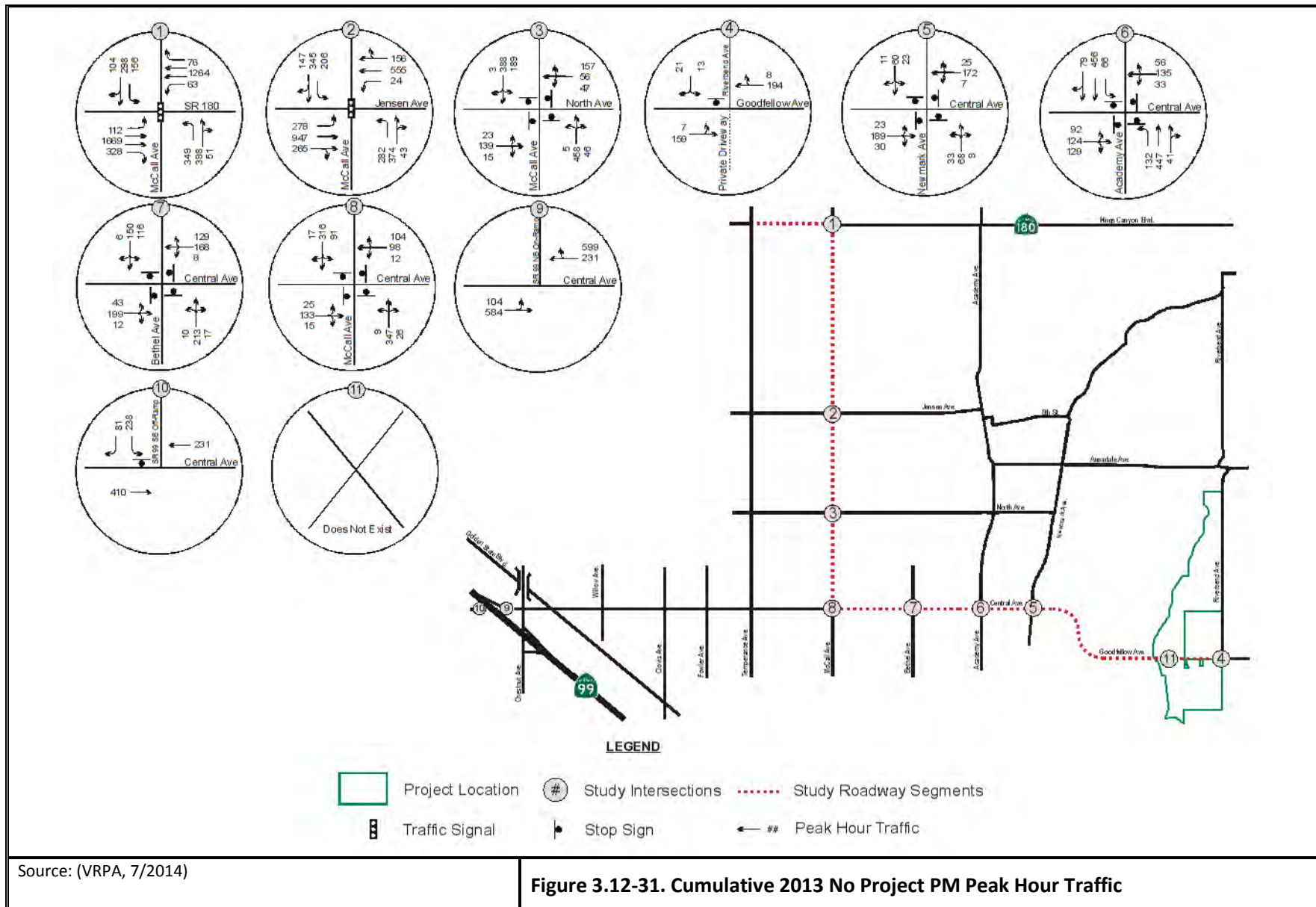
Figure 3.12-28. Year 2019 Plus Project AM Peak Hour Traffic



Source: (VRPA, 7/2014)

Figure 3.12-29. Year 2019 Plus Project PM Peak Hour Traffic





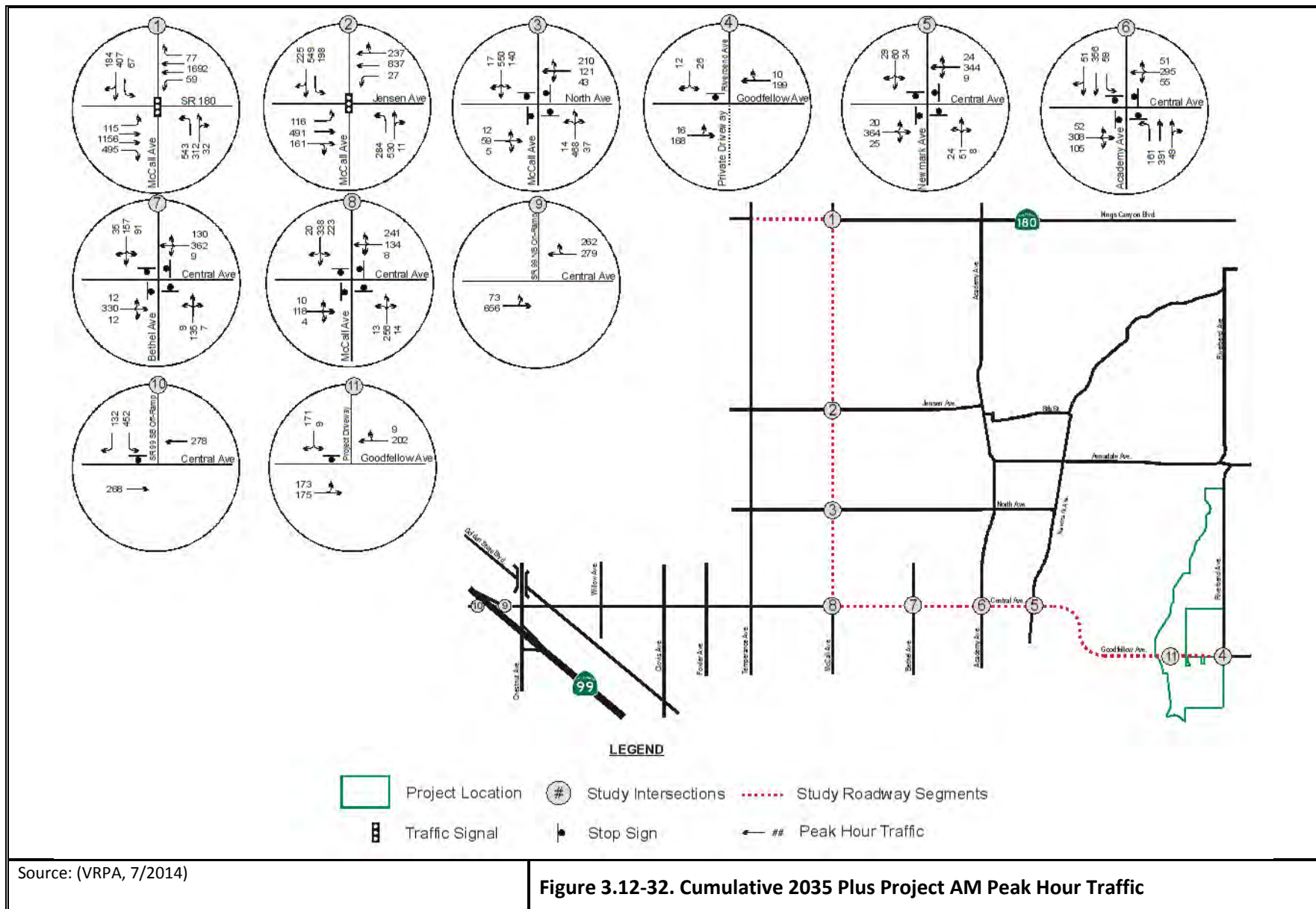
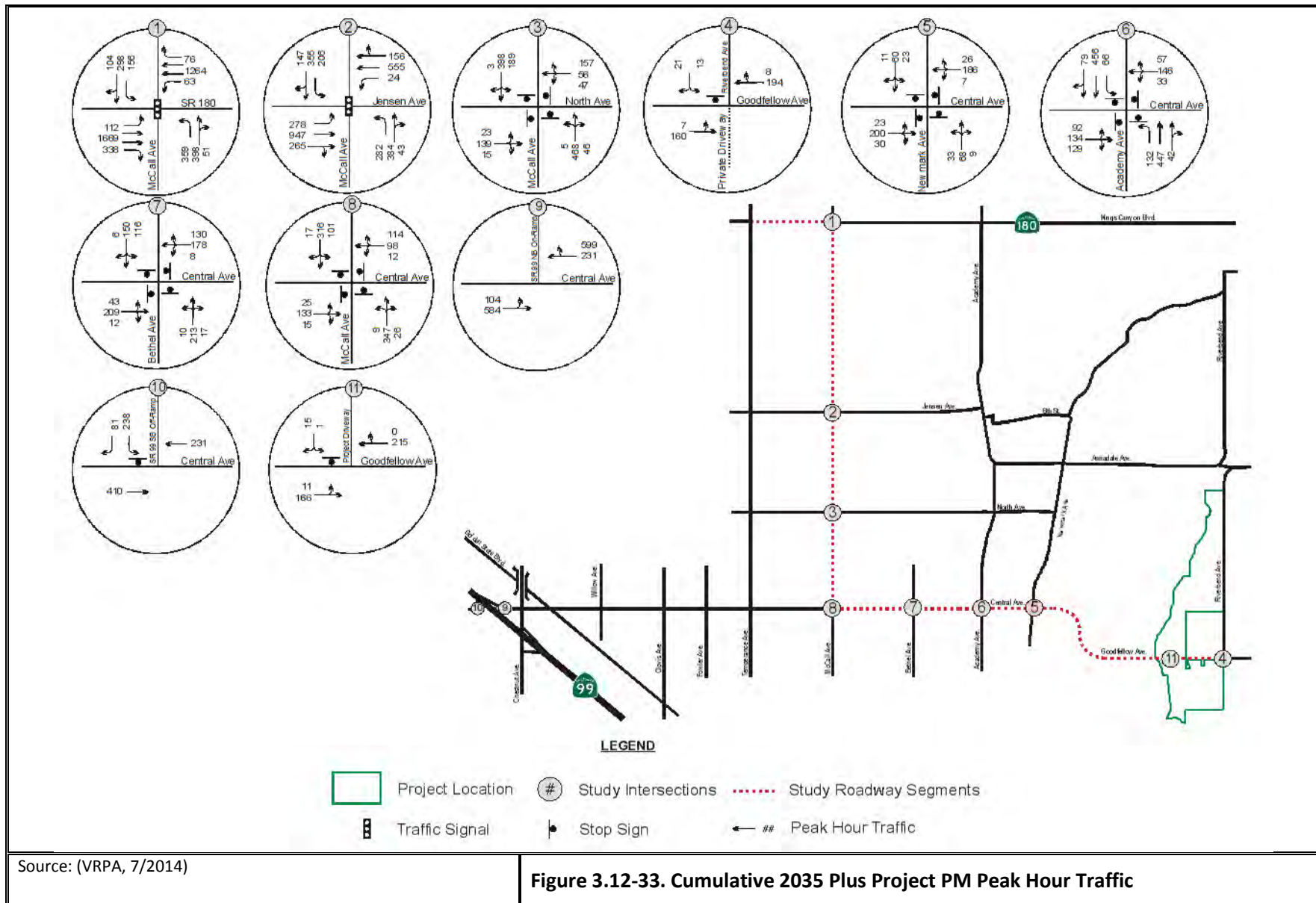


Figure 3.12-32. Cumulative 2035 Plus Project AM Peak Hour Traffic



Source: (VRPA, 7/2014)

Figure 3.12-33. Cumulative 2035 Plus Project PM Peak Hour Traffic

Expected Intersection and Roadway Segment Level of Service

Table 3.12-9 and Table 3.12-10 show the intersections and roadway segments that are expected to have significant impacts for various scenarios.

Queuing Analysis

Table 3.12-11 provides a queue length summary for left and right turn lanes at the study intersections for the Existing Plus Project, Existing Plus Approved/Pending, Existing Plus Project Plus Approved/Pending, Year 2015, Year 2017, Year 2019, and Cumulative Year 2035 scenarios. The queuing analyses for the study intersections are provided in Appendix I of the TIS located in Appendix K of this DEIR.

Queuing analysis was completed using information found in the Synchro outputs. Synchro provides 50th and 95th percentile maximum queue lengths in feet. The 50th percentile maximum queue is the maximum length of queue on a typical cycle and the 95th percentile queue is the maximum length of queue with 95th percentile traffic volumes. The queues shown in Table 3.12-11 represent the 95th percentile queue lengths for the respective lane movements.

Traffic Index

The traffic impact analysis includes an evaluation of the Project's impact to the Traffic Index (TI) along all of the roadway segments analyzed in the TIS. The TI is a measure of the number of truck-equivalent single-axle loads expected over the design period of a particular roadway. Pavement and road conditions can be evaluated using a TI. An increase in the TI as a result of a project's traffic or regional growth creates a corresponding decrease in the expected life of the existing pavement. The actual decrease in the life of the pavement for a given increase in TI is dependent upon variable factors such as existing asphalt concrete thickness, aggregate base thickness, and strength of the subgrade soils (R-values).

The County has established significance criteria for the purpose of determining if a project has an impact to the TI. If truck traffic generated by a project results in the TI increasing by a factor of 0.5, the project is required to mitigate the roadway structural section to accommodate the increase in truck traffic. TI calculations for this Project are included in Appendix J of the TIS located in Appendix K of this DEIR.

The analysis of the TI was determined by using existing ADTT and Chapter 610 of Caltrans' Highway Design Manual. The Cumulative Year 2035 With and Without Project scenarios were analyzed in order to determine Project impacts to the TI. Results of the analysis are shown in Table 3.12-12. Results show that the Project would impact seven (7) out of eleven (11) of the roadways analyzed because the Project's truck traffic results in the TI increasing by a factor of 0.5 or greater. Impacts to State facilities are not shown because Caltrans has not established significance criteria for impacts to the traffic index of State facilities.

Table 3.12-9. Intersection Operations

Intersection	Peak Hour	Existing		Existing Plus Project		Existing Plus Approved / Pending		Existing Plus Project Plus Approved / Pending		Year 2015 No Project		Year 2015 Plus Phase 1		Year 2017 No Project		Year 2017 Plus Phase 2		Year 2019 No Project		Year 2019 Plus Phase 3		Cumulative Year 2035 No Project		Cumulative Year 2035 Plus Project	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. McCall Avenue / SR-180	AM	30.1	C	56.1	E	33.9	C	57.8	E	63.3	E	87.3	F	79.1	E	102.8	F	89.2	F	116.1	F	200.8	F	221.2	F
	PM	28.9	C	30.0	C	29.0	C	30.2	C	62.9	E	64.9	E	75.4	E	77.4	E	89.5	F	91.2	F	229.9	F	231.1	F
2. McCall Avenue / Jensen Avenue	AM	26.9	C	33.5	C	26.9	C	33.5	C	33.8	C	42.2	D	40.2	D	51.2	D	46.3	D	60.0	E	138.2	F	160.3	F
	PM	25.9	C	26.2	C	25.9	C	26.2	C	31.4	C	31.7	C	36.5	D	37.0	D	42.0	D	42.4	D	168.3	F	167.7	F
3. McCall Avenue / North Avenue	AM	11.9	B	--	C*	11.9	B	--	C*	14.1	B	--	C*	15.9	C	--	C*	18.3	C	--	C*	59.9+	F+	154.3+	F+
	PM	11.1	B	11.3	B	11.1	B	11.3	B	13.1	B	13.5	B	14.8	B	15.4	C	17.1	C	18.0	C	104.4+	F+	110.8+	F+
4. Riverbend Avenue / Goodfellow Avenue	AM	9.4	A	9.5	A	10.5	B	10.7	B	10.8	B	10.9	B	10.9	B	11.1	B	11.1	B	11.3	B	11.1	B	11.2	B
	PM	9.4	A	9.5	A	9.8	A	9.8	A	9.7	A	9.7	A	9.9	A	9.9	A	10.7	B	9.7	A	10.3	B	10.3	B
5. Newmark Avenue / Central Avenue	AM	8.1	A	11.3	B	8.8	A	13.9	B	9.1	A	15.1	C	9.3	A	15.8	C	9.5	A	16.7	C	9.9	A	15.7	C
	PM	8.2	A	8.3	A	8.4	A	8.5	A	8.6	A	8.7	A	8.7	A	8.9	A	8.8	A	9.0	A	9.9	A	10.1	B
6. Academy Avenue / Central Avenue	AM	10.1	B	18.9	C	11.5	B	--	C*	13.9	B	--	C*	15.5	C	--	C*	17.8	C	77.3+	F+	62.8+	F+	143.7+	F+
	PM	12.9	B	13.5	B	14.1	B	14.7	B	18.9	C	20.1	C	23.9	C	--	C*	--	C*	35.2+	E+	126.5+	F+	133.8+	F+
7. Bethel Avenue / Central Avenue	AM	9.1	A	14.7	B	9.8	A	18.1	C	10.6	B	23.1	C	11.0	B	--	C*	11.6	B	--	C*	15.3	C	--	C*
	PM	9.4	A	9.6	A	9.7	A	9.9	A	10.6	B	10.8	B	11.0	B	11.3	B	11.6	B	11.9	B	17.6	C	18.5	C
8. McCall Avenue / Central Avenue	AM	9.7	A	19.4	C	10.5	B	24.6	C	11.7	B	--	C*	12.6	B	--	C*	13.6	B	--	C*	19.2	C	78.1+	F+
	PM	9.4	A	9.5	A	9.7	A	9.8	A	10.6	B	10.8	B	10.5	B	11.5	B	11.9	B	12.2	B	--	C*	30.1	D
9. SR-99 NB On-Ramp / Central Avenue	AM	1.5	A	1.5	A	1.6	A	1.6	A	1.6	A	1.6	A	1.6	A	1.6	A	1.6	A	1.6	A	1.7	A	1.7	A
	PM	2.3	A	2.3	A	2.3	A	2.3	A	2.3	A	2.3	A	2.3	A	2.3	A	2.3	A	2.3	A	2.2	A	2.2	A
10. SR-99 SB Off-Ramp / Central Avenue	AM	--	C**	--	C*	--	C*	--	C*	134.1++	F++	137.8++	F++	149.6++	F++	152.6++	F++	164.6++	F++	168.4++	F++	153.9++	F++	157.7++	F++
	PM	19.0	C	19.0	C	21.4	C	21.4	C	23.9	C	23.9	C	25.4++	D++	25.4++	D++	26.8++	D++	26.8++	D++	27.1++	D++	27.1++	D++
11. Project Driveway / Goodfellow Avenue	AM			9.7	A			10.3	B			10.4	B			10.6	B			10.6	B			11.4	B
	PM			8.7	A			8.8	A			8.9	A			9.0	A			9.1	A			9.7	A

Notes: Delay is measured in seconds. LOS = Level of Service / BOLD denotes LOS standard has been exceeded. For signalized and all-way stop controlled intersections, delay results show the average for the entire intersection. For one-way and two-way stop controlled intersections, delay results show the delay for the worst movement.

* Traffic signal not warranted. Level of service C assumed.

+ Meets peak hour signal warrants. ++ Meets four-hour signal warrants.

Source: VRPA, 7/2014 (Appendix K)

Table 3.12-10. Segment Operations

Street Segment	Direction	Peak Hour	Existing Plus Project		Existing Plus Approved / Pending		Existing Plus Project Plus Approved / Pending		Year 2015 No Project		Year 2015 Plus Phase 1		Year 2017 No Project		Year 2017 Plus Phase 2		Year 2019 No Project		Year 2019 Plus Phase 3		Cumulative Year 2035 No Project		Cumulative Year 2035 Plus Project	
			Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
McCall Avenue to Highland Avenue	EB	AM	984	B	992	B	1,137	B	1,124	B	1,269	B	1,190	B	1,335	B	1,255	B	1,400	B	1,752	C	1,897	D
		PM	1,363	B	1,362	B	1,372	B	1,494	B	1,504	B	1,559	B	1,569	C	1,625	C	1,635	C	2,151	F	2,161	F
	WB	AM	1,698	C	1,698	C	1,842	C	1,864	C	2,008	F	1,947	D	2,091	F	2,030	F	2,174	F	2,695	F	2,839	F
		PM	914	B	925	B	935	B	1,057	B	1,067	B	1,123	B	1,133	B	1,189	B	1,199	B	1,717	C	1,727	C
Highland Avnue to De Wolf Avenue	EB	AM	988	B	996	B	1,141	B	1,159	B	1,304	B	1,240	B	1,385	B	1,321	B	1,466	B	1,971	F	2,116	F
		PM	1,400	B	1,399	B	1,409	B	1,542	B	1,552	B	1,614	C	1,624	C	1,685	C	1,695	C	2,257	F	2,267	F
	WB	AM	1,711	C	1,711	C	1,855	C	1,901	D	2,045	F	1,995	F	2,139	F	2,090	F	2,234	F	2,848	F	2,992	F
		PM	889	B	900	B	910	B	1,066	B	1,076	B	1,148	B	1,158	B	1,231	B	1,241	B	1,893	D	1,903	D
De Wolf Avenue to Temperance Avenue ¹	EB	AM	1,010	B	1,018	B	1,163	B	1,155	B	1,300	B	1,223	B	1,368	B	1,291	B	1,436	B	1,838	B	1,983	B
		PM	1,460	B	1,459	B	1,469	B	1,566	B	1,576	B	1,619	B	1,629	B	1,672	B	1,682	B	2,099	B	2,109	B
	WB	AM	1,774	B	1,774	B	1,918	B	1,957	B	2,101	B	2,049	B	2,193	C	2,140	B	2,284	C	2,873	C	3,017	D
		PM	909	B	920	B	930	B	1,064	B	1,074	B	1,135	B	1,145	B	1,207	B	1,217	B	1,781	B	1,791	C
McCall Avenue																								
SR-180 to Jensen Avenue	NB	AM	489	C	338	B	489	C	403	B	554	C	436	B	587	C	470	C	621	C	736	C	887	F
		PM	407	B	397	B	407	B	463	C	473	C	495	C	505	C	529	C	539	C	808	F	818	F
	SB	AM	555	C	403	B	555	C	469	C	621	C	503	C	655	C	538	C	690	C	820	F	972	F
		PM	380	B	370	B	380	B	423	B	433	B	448	B	458	B	475	C	485	C	698	C	708	C
Jensen Avnue to North Avenue	NB	AM	479	C	324	B	479	C	385	B	540	C	413	B	568	C	443	B	598	C	670	C	825	F
		PM	330	B	320	B	330	B	390	B	400	B	422	B	432	B	454	B	464	C	699	C	709	C
	SB	AM	452	B	296	B	452	B	347	B	503	C	372	B	528	C	396	B	552	C	551	C	707	C
		PM	295	B	285	B	295	B	346	B	356	B	377	B	387	B	406	B	416	B	654	C	664	C
North Avenue to Central Avenue	NB	AM	296	B	141	B	296	B	177	B	332	B	196	B	351	B	214	B	369	B	364	B	519	C
		PM	249	B	239	B	249	B	283	B	293	B	306	B	316	B	330	B	340	B	509	C	519	C
	SB	AM	392	B	236	B	392	B	270	B	426	B	287	B	443	B	304	B	460	C	442	B	598	C
		PM	213	B	203	B	213	B	243	B	253	B	264	B	274	B	284	B	294	B	450	B	460	C
Central Avenue - Goodfellow Avenue																								
SR-99 NB On-Ramp to SR-99 SB Off-Ramp	EB	AM	603	C	634	C	637	C	649	C	652	C	656	C	659	C	663	C	666	C	726	C	729	C
		PM	507	C	528	C	528	C	553	C	553	C	568	C	568	C	581	C	581	C	688	C	688	C
	WB	AM	156	B	185	B	188	B	201	B	204	B	209	B	212	B	216	B	219	B	279	B	282	B
		PM	138	B	156	B	156	B	169	B	169	B	175	B	175	B	181	B	181	B	231	B	231	B
McCall Avenue to Bethel Avenue	EB	AM	220	B	97	B	256	B	113	B	272	B	121	B	280	B	129	B	288	B	196	B	355	B
		PM	136	B	146	B	156	B	163	B	173	B	172	B	182	B	182	B	192	B	254	B	264	B
	WB	AM	262	B	140	B	298	B	157	B	315	B	166	B	324	B	152	B	310	B	248	B	406	B
		PM	105	B	115	B	125	B	131	B	141	B	139	B	149	B	148	B	158	B	214	B	224	B
Bethel Avenue to Academy Avenue	EB	AM	270	B	147	B	306	B	173	B	332	B	185	B	344	B	199	B	358	B	306	B	465	C
		PM	182	B	192	B	202	B	215	B	225	B	228	B	238	B	239	B	249	B	349	B	359	B
	WB	AM	307	B	185	B	343	B	211	B	369	B	224	B	382	B	237	B	395	B	349	B	507	C
		PM	159	B	168	B	179	B	197	B	208	B	212	B	223	B	226	B	237	B	346	B	357	B
Academy Avenue to Newmark Avenue	EB	AM	243	B	132	B	305	B	150	B	323	B	158	B	331	B	169	B	342	B	243	B	416	B
		PM	110	B	122	B	133	B	141	B	152	B	151	B	162	B	161	B	172	B	242	B	253	B
	WB	AM	246	B	133	B	304	B	148	B	319	B	157	B	328	B	165	B	336	B	230	B	401	B
		PM	101	B	111	B	125	B	128	B	142	B	139	B	153	B	147	B	161	B	224	B	238	B
Newmark Avenue to Riverbend Avenue	EB	AM	232	B	121	B	294	B	139	B	312	B	148	B	321	B	158	B	331	B	233	B	406	B
		PM	88	B	100	B	111	B	118	B	129	B	130	B	141	B	139	B	150	B	244	B	255	B
	WB	AM	220	B	108	B	279	B	124	B	295	B	131	B	302	B	141	B	312	B	206	B	377	B
		PM	81	B	91	B	106	B	108	B	123	B	119	B	134	B	128	B	143	B	215	B	230	B

LOS = Level of Service / BOLD denotes LOS standard has been exceeded

Source: VRPA, 7/2014 (Appendix K)

(1) Segment Analysis was performed using HCM Methodologies

(2) Freeway Segment

Table 3.12-11. Queuing Operations

Intersection	Existing Queue Storage Length (ft)		Existing Plus Project		Existing Plus Approved / Pending		Existing Plus Project Plus Approved / Pending		Year 2015 No Project		Year 2015 Plus Phase 1		Year 2017 No Project		Year 2017 Plus Phase 2		Year 2019 No Project		Year 2019 Plus Phase 3		Cumulative Year 2035 No Project		Cumulative Year 2035 Plus Project	
			AM (ft)	PM (ft)	AM (ft)	PM (ft)	AM (ft)	PM (ft)	AM (ft)	PM (ft)	AM (ft)	PM (ft)	AM (ft)	PM (ft)	AM (ft)	PM (ft)	AM (ft)	PM (ft)	AM (ft)	PM (ft)	AM (ft)	PM (ft)	AM (ft)	PM (ft)
McCall Avenue / SR-180	EB Left	500	43	70	43	70	43	70	55	75	55	75	60	77	60	77	65	80	65	80	120	108	120	108
	EB Right	500	60	56	50	55	60	56	52	56	62	57	53	57	62	57	53	57	63	58	67	61	184	62
	WB Left	500	31	28	31	28	31	28	36	35	36	35	38	37	38	37	40	40	40	40	60	63	60	63
	WB Right	500	13	16	13	16	13	16	16	19	16	19	17	21	17	21	18	22	18	22	33	31	33	31
	NB Left	200	411	282	239	268	411	282	269	289	441	302	285	299	455	312	299	311	470	323	417	395	579	407
	SB Left	400	26	41	26	41	26	41	33	55	33	55	37	63	37	63	39	71	39	71	67	176	67	176
McCall Avenue / Jensen Avenue	EB Left	150	24	47	23	47	24	47	36	101	36	103	44	132	44	134	52	163	52	163	174	392	174	392
	WB Left	150	38	33	36	33	38	33	38	34	38	35	38	35	38	35	38	36	38	36	38	36	38	36
	NB Left	75	166	77	148	77	166	77	195	125	201	126	212	152	219	154	227	177	233	177	361	364	366	364
	SB Left	100	201	197	185	195	201	197	208	211	210	213	215	220	215	222	219	228	219	228	253	265	253	265

Source: VRPA, 7/2014 (Appendix K)

Table 3.12-12. Traffic Index

Street Segment	Year 2035 No Project	Year 2035 Plus Project	Increase	Cumulative Year 2035 No Project	Increase	Cumulative Year 2035 Plus Project	Increase
Traffic Index (TI)							
Central Avenue							
SR 99 SB Off-Ramp and SR 99 NB On-Ramp	11.0	11.0	0.0	11.5	0.5*	11.5	0.5*
McCall Avenue and Bethel Avenue	8.0	11.0	3.0	11.0	3.0	12.0	4.0
Bethel Avenue and Academy Avenue	8.5	11.0	2.5	11.0	2.5	12.0	3.5
Academy Avenue and Newmark Avenue	8.0	11.0	3.0	11.0	3.0	12.0	4.0
Newmark Avenue and Riverbend Avenue	8.0	11.0	3.0	11.0	3.0	12.0	4.0
McCall Avenue							
SR 180 (Kings Canyon) and Jensen Avenue	9.0	11.0	2.0	9.0	0.0	11.0	2.0
Jensen Avenue and North Avenue	8.5	11.0	2.5	8.5	0.0	11.0	2.5
North Avenue and Central Avenue	8.5	11.0	2.5	8.5	0.0	11.0	2.5
SR 180							
McCall Avenue and Highland Avenue	11.5	12.0	0.5*	12.5	1.0*	13.0	1.5*
Highland Avenue and DeWolf Avenue	11.5	12.0	0.5*	12.5	1.0*	13.0	1.5*
DeWolf Avenue and Temperance Avenue	11.5	12.0	0.5*	12.5	1.0*	13.0	1.5*

Bold denotes standard has been exceeded
* Caltrans has not established significance criteria
Source: VRPA, 7/2014 (Appendix K)

Level of Significance Before Mitigation

Potentially significant

Mitigation Measures***Mitigation Measure Trans 1:***

The Project Applicant shall pay proportional fair share contributions towards the required improvements. (Please refer to Section 3.12.6.8 for explanation of the County and Caltrans fair share formulas and Tables 3.12-16 through 3.12-18 for fair share percentages). The Project Applicant shall enter into traffic mitigation agreements with the County (for non-SR180 improvements) and with Caltrans (for SR 180 improvements). The traffic mitigation agreements shall establish the exact payment amounts and thresholds that define the timing of the required payments. The following improvements are required:

EXISTING CONDITIONS

For this scenario, no improvements are recommended.

EXISTING PLUS PROJECT CONDITIONS

For this scenario, a fair share contribution for the following improvement is required:

McCall Avenue at SR 180

Widen the northbound approach to 2 left turn lanes and 1 through lane with a shared right (adding 1 left turn lane).

Prior to any product being shipped from the Project site the Project applicant shall contribute 100% of the improvement cost.

Existing Plus Approved/Pending Conditions

For this scenario, no improvements are recommended.

Existing Plus Project Plus Approved/Pending Conditions

For this scenario, the following improvement is required:

McCall Avenue at SR 180

Widen the northbound approach to 2 left turn lanes and 1 through lane with a shared right (adding 1 left turn lane).

Year 2015 No Project Conditions

For this scenario, the following improvements are required:

McCall Avenue at SR 180

Widen the northbound approach to 2 left turn lanes and 1 through lane with a shared right (adding 1 left turn lane).

SR 99 SB Off-Ramp at Central Avenue

Install traffic signal.

Year 2015 Plus Phase 1 Conditions

For this scenario, the following additional improvements are recommended in addition to 2015 no project conditions:

McCall Avenue at Jensen Avenue

Widen the northbound approach to 1 left turn lane and 2 through lanes with a shared right (adding 1 through lane).

Widen the southbound approach to 1 left turn lane and 2 through lanes with a shared right (adding 1 through lane).

Year 2017 No Project Conditions

For this scenario, the following improvements are required:

McCall Avenue at SR 180

Widen the northbound approach to 2 left turn lanes and 1 through lane with a shared right (adding 1 left turn lane).

McCall Avenue at Jensen Avenue

Adjust signal timing.

SR 99 SB Off-Ramp at Central Avenue

Install traffic signal.

Year 2017 Plus Phase 2 Conditions

For this scenario, the following additional improvements are recommended in addition to 2017 no project conditions:

McCall Avenue at SR 180

Widen the southbound approach to 1 left turn lane, 1 through lane, and 1 right turn lane (adding 1 right turn lane).

McCall Avenue at Jensen Avenue

Widen the northbound approach to 1 left turn lane and 2 through lanes with a shared right (adding 1 through lane).

Widen the southbound approach to 1 left turn lane and 2 through lanes with a shared right (adding 1 through lane).

Year 2019 No Project Conditions

For this scenario, the following improvements are required:

McCall Avenue at SR 180

Widen the northbound approach to 2 left turn lanes and 1 through lane with a shared right (adding 1 left turn lane).

Widen the southbound approach to 1 left turn lane, 1 through lane, and 1 right turn lane (adding 1 right turn lane).

McCall Avenue at Jensen Avenue

Widen the westbound approach to 1 left turn lane, 2 through lanes, and 1 right turn lane (adding 1 right turn lane).

SR 99 SB Off-Ramp at Central Avenue

Install traffic signal.

Year 2019 Plus Phase 3 Conditions

For this scenario, the following additional improvements are recommended in addition to 2019 no project conditions:

McCall Avenue at Jensen Avenue

Widen the northbound approach to 1 left turn lane and 2 through lanes with a shared right (adding 1 through lane).

Widen the southbound approach to 1 left turn lane and 2 through lanes with a shared right (adding 1 through lane).

Academy Avenue at Central Avenue

Install traffic signal.

Cumulative Year 2035 No Project Conditions

For this scenario, the following improvements are required:

McCall Avenue at SR 180

Widen the northbound approach to 2 left turn lanes, 2 through lanes, and 1 right turn lane (adding 1 left turn lane, 1 through lane, and 1 right turn lane).

Widen the southbound approach to 1 left turn lane, 2 through lanes, and 1 right turn lane (adding 1 through lane and 1 right turn lane).

McCall Avenue at Jensen Avenue

Widen the eastbound approach to 2 left turn lanes, 2 through lanes, and 1 right turn lane (adding 1 left turn lane and 1 right turn lane).

Widen the westbound approach to 1 left turn lane, 2 through lanes, and 1 right turn lane (adding 1 right turn lane).

Widen the northbound approach to 2 left turn lanes, 1 through lane, and 1 right turn lane (adding 1 left turn lane and 1 right turn lane).

Widen the southbound approach to 2 left turn lanes, 1 through lane, and 1 right turn lane (adding 1 left turn lane and 1 right turn lane). (8.5% contribution)

McCall Avenue at North Avenue

Install traffic signal.

Academy Avenue at Central Avenue

Install traffic signal.

SR 99 SB Off-Ramp at Central Avenue

Install traffic signal.

McCall Avenue between SR 180 and Jensen Avenue

Two travel lanes in the northbound direction (adding 1 travel lane).

Two travel lanes in the southbound direction (adding 1 travel lane).

CUMULATIVE YEAR 2035 PLUS PROJECT CONDITIONS

For this scenario, the following additional improvements are required:

McCall Avenue at Jensen Avenue

Widen the northbound approach to 2 left turn lanes, 2 through lanes, and 1 right turn lane (adding 1 left turn lane, 1 through lane, and 1 right turn lane).

Widen the southbound approach to 2 left turn lanes, 2 through lanes, and 1 right turn lane (adding 1 left turn lane, 1 through lane, and 1 right turn lane).

McCall Avenue at Central Avenue

Install traffic signal.

McCall Avenue between Jensen Avenue and North Avenue

Two travel lanes in the northbound direction (adding 1 travel lane).

In addition to the proposed improvements identified above, Table 3.12-13 identifies left turn and right pocket lengths required for the Cumulative Year 2035 scenario. The determination of the recommended storage length was determined by the queuing analysis shown in Chapter 3 and Chapter 400 of Caltrans' Highway Design Manual.

Table 3.12-13. Left Turn and Right Turn Storage Requirements

Intersection	Existing Queue Storage Length (ft)		Cumulative 2035 With Project Recommended Storage Length (ft)
McCall Avenue / SR-180	EB Left	500	500
	EB Right	500	500
	WB Left	500	500
	WB Right	500	500
	NB Left	200	2 @ 250
	NB Right	--	435
	SB Left	400	400
	SB Right	--	435
McCall Avenue / Jensen Avenue	EB Left	150	2 @ 150
	EB Right	--	100
	WB Left	150	150
	WB Right	--	100
	NB Left	75	200
	NB Right	--	100
	SB Left	100	125
	SB Right	--	100
Academy Avenue / Central Avenue	NB Left	200	200
	SB Left	200	200
SR 99 SB Off-Ramp / Central Avenue	SB Left	50	225
	SB Right	50	50
Project Driveway / Goodfellow Avenue	EB Left	--	550
	WB Right	--	550

Source: VRPA, 7/2014 (Appendix K)

Level of Significance After Mitigation

The level of service resulting from the recommended improvements identified above is shown in Table 3.12-14 for the study area intersections and Table 3.12-15 for the study segments. The resulting Cumulative 2035 lane geometry is shown in Figure 3.12-34.

Table 3.12-14. Intersection Operations with Mitigation

Intersection	Peak Hour	Existing Plus Project		Existing Plus Approved / Pending		Existing Plus Project Plus Approved / Pending		Year 2015 No Project		Year 2015 Plus Phase 1		Year 2017 No Project		Year 2017 Plus Phase 2		Year 2019 No Project		Year 2019 Plus Phase 3		Cumulative Year 2035 No Project		Cumulative Year 2035 Plus Project	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
McCall Avenue / SR-180	AM	28.1	C			29.3	C	30.0	C	34.5	C	33.8	C	32.8	C	29.3	C	32.9	C	36.8	D*	40.3	D*
	PM	25.1	C			25.1	C	29.0	C	28.7	C	32.6	C	30.8	C	33.3	C	33.6	C	51.5	D*	52.0	D*
McCall Avenue / Jensen Avenue	AM									27.6	C	34.8	C	30.5	C	32.7	C	28.6	C	33.0	C	27.7	C
	PM									24.9	C	33.4	C	26.8	C	34.8	C	26.8	C	32.8	C	25.8	C
McCall Avenue / North Avenue	AM																			14.9	B	20.2	C
	PM																			14.7	B	15.0	B
Academy Avenue / Central Avenue	AM																	18.6	B	17.4	B	22.0	C
	PM																	15.0	B	18.6	B	19.0	B
McCall Avenue / Central Avenue	AM																					18.1	B
	PM																					11.0	B
SR-99 SB Off-Ramp / Central Avenue	AM							11.8	B	11.9	B	12.0	B	12.1	B	12.1	B	14.0	B	11.6	B	14.0	B
	PM							10.9	B	10.9	B	11.1	B	11.1	B	11.2	B	11.2	B	11.7	B	11.7	B

Delay is measured in seconds

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

Source: VRPA, 7/2014 (Appendix K)

Table 3.12-15. Segment Operations with Mitigation

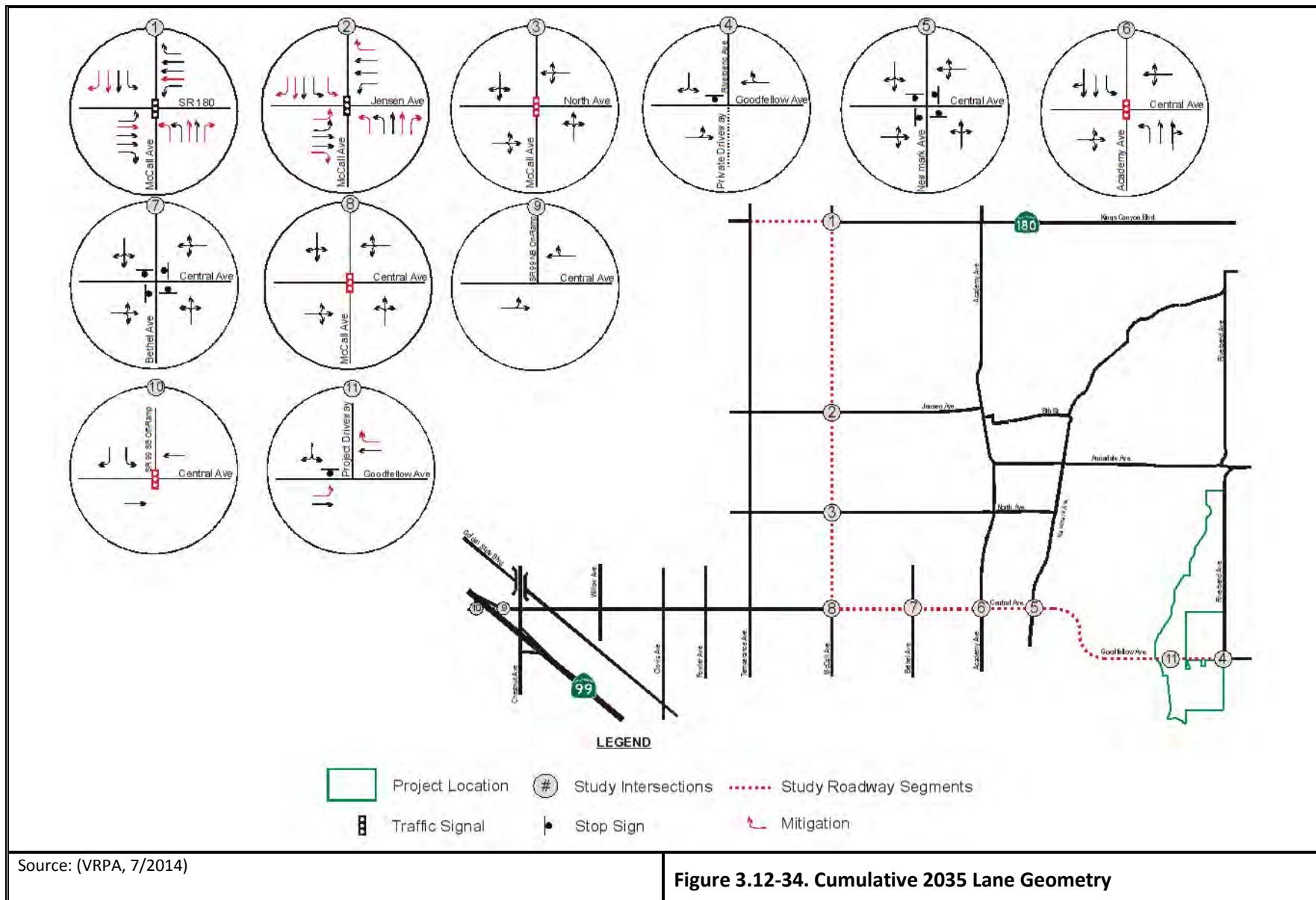
Street Segment	Direction	Peak Hour	Cumulative Year 2035 No Project		Cumulative Year 2035 Plus Project	
			Volume	LOS	Volume	LOS
SR 180 ¹						
McCall Avenue to Highland Avenue	EB	AM				
		PM				
	WB	AM			2,839	D *
		PM			1,727	B
Highland Avnue to De Wolf Avenue	EB	AM				
		PM				
	WB	AM	2,848	D *	2,992	D *
		PM	1,893	B	1,903	B
De Wolf Avenue to Temperance Avenue ²	EB	AM				
		PM				
	WB	AM			3,017	D *
		PM			1,791	B
McCall Avenue						
SR-180 to Jensen Avenue	NB	AM	736	B	887	B
		PM	808	B	818	B
	SB	AM	820	B	972	B
		PM	698	B	708	B
Jensen Avnue to North Avenue	NB	AM			825	B
		PM			709	B
	SB	AM				
		PM				

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

1 Segment analysis was performed using HCM Methodologies.

2 Freeway segment.

Source: VRPA, 7/2014 (Appendix K)



Mitigation Measure TRANS-1 requires that the Project Applicant enter into traffic mitigation agreements with the County and Caltrans and requires the Applicant to contribute proportional fair share funding toward the improvements identified above. The applicant, County, and Caltrans can agree to cumulate traffic mitigation contributions by the Applicant to concentrate on one or more improvements to make sure at least some improvement(s) is totally funded. The traffic mitigation agreements will establish the payment amounts and timing of the payments. The post-mitigation impacts would result in a less than significant impact. However, even with the Applicant's contribution of the Project's proportional fair share of funding for these improvements, the improvements necessary to achieve acceptable level of service may not occur prior to the Project's introduction of additional vehicle trips due to issues such as lack of funding. Therefore, the Project's impact under the conditions described above is considered significant and unavoidable.

The manner in which equitable fair share responsibility is calculated is discussed in Section 3.12.6.11.

3.12.6.3 Change in Air Traffic Patterns and Substantial Safety Risk

Impact Statement

Impact TRANS-3: Would the Project result in any changes in air traffic patterns or present a substantial safety risk? (CEQA Guidelines Threshold Criteria (c))

Impact Analysis

Height standards for quantifying obstructions to air navigation are established by the Federal Aviation Administration (FAA) and are defined in Federal Aviation Regulation (FAR) Part 77. A notice must be provided to the FAA if any kind of construction or alteration is 1) more than 200 feet in height above the ground level at its site or 2) of a greater height than an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from all edges of the runway surface if the runway is more than 3,200 feet in length. The FAA will then make the determination as to whether a project constitutes a hazard to navigation.

The proposed dragline excavator would extend a maximum of 120 feet above ground surface. As a result, the FAA height threshold would not be exceeded. In addition, the Project would not rely upon commercial air cargo. Therefore, Project implementation would not result changes to air traffic patterns or result in a safety risk and less than significant impacts would result.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

Mitigation measures are not required.

Level of Significance After Mitigation

Not applicable.

3.12.6.4 Increased Hazards from Design Feature**Impact Statement**

Impact TRANS-4: Would the Project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? **(CEQA Guidelines Threshold Criteria (d))**

Impact Analysis

The Project would increase vehicle trips at the Project site access intersection which could increase hazards and result in unacceptable levels of service.

Site Access

There will be one access point to the Project located along Goodfellow Avenue west of Riverbend Avenue. As shown in Table 3.12-9, the LOS in the Cumulative Year 2035 Plus Phase 3 at Goodfellow Avenue and the Project Driveway is LOS 'B' and 'A' in the AM and PM peak hour, respectively. In addition, the segment analysis for Goodfellow Avenue between Riverbend Avenue and Newmark Avenue shows that the AM and PM peak hours LOS for the Cumulative Year 2035 Plus Phase 3 will be LOS B. Therefore, the impact to LOS at the Project access road would be less than significant and no recommended improvements were identified.

However, Goodfellow Avenue is classified as an arterial in the Transportation Element of the Fresno County General Plan. The General Plan also addresses safety concerns and specifies that new developments along arterials are required to abide by the following (Transportation Element pgs 3-6 to 3-7):

- Direct access from an arterial to abutting property to maintain highway capacity and safety shall be restricted through application of design requirements of new development which may provide for frontage roads, deceleration/ acceleration lanes, restricted turn movements, access to other roads or driveways, or limits on the number and/ or location of points of direct access.
- Turnaround facilities shall be provided on parcels having direct access to arterials so that vehicles do not back out onto the roadway.
- Direct access points shall be located at sufficient intervals from each other and from public roads to maintain the safety and the traffic carrying capacity of the roadway. Wherever possible, direct access points shall be located to allow existing parcels one (1) direct access to an arterial. In some instances, where there is not sufficient frontage, two (2) or more parcels may be

required to share one access point. In some instances where there is sufficient frontage, more than one direct access from a single parcel may be permitted.

- Existing direct access may be relocated, subject to the same standards as for new access.
- Access to a divided arterial may be restricted to right turn movements and median crossing may be prohibited.
- Access to an arterial may occur at intersections with expressways, super arterials, other arterials, and collectors. Access from local streets may be restricted through the use of islands and turn lanes.

As a result of the specifications shown above, an eastbound left turn and westbound right turn at the Project Driveway at Goodfellow Avenue is recommended to minimize safety concerns. The storage length requirements for the eastbound left turn lane and the westbound right turn lane are shown in Table 3.12-15. In addition to the left turn and right turn lanes, there would be a need for a westbound acceleration lane for trucks exiting the site due to safety considerations. Fresno County has indicated that all improvements at the driveway shall be designed in accordance with the Caltrans Highway Design Manual.

Level of Significance Before Mitigation

Potentially significant

Mitigation Measures

Mitigation Measures TRANS-2:

The Project applicant shall make the following improvements prior to any product being shipped from the Project site.

Project Driveway at Goodfellow

Eastbound left turn and westbound right turn at the Project Driveway at Goodfellow Avenue.

Westbound acceleration lane for trucks exiting the site.

Level of Significance After Mitigation

Less than significant after mitigation.

3.12.6.5 Emergency Access

Impact Statement

Impact TRANS-5: Would the Project result in inadequate emergency access? (CEQA Guidelines Threshold Criteria (e))

Impact Analysis

The Project is located in a rural area away from substantial residential, commercial or industrial areas which could have congested roadways and result in interference with emergency vehicles. The Project site is located near major roadways and would have a paved access road to the facility. These features would be adequate in providing emergency access to the facility. The facility would not interfere with emergency vehicles responding to other locations in the region as demonstrated by the traffic impact analysis discussed above. Therefore the Project would not result in inadequate emergency access and this impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable

3.12.6.6 Conflict with policies, plans, or programs for public transit, bicycle, or pedestrian facilities**Impact Statement**

Impact TRANS-6: Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? **(CEQA Guidelines Threshold Criteria (f))**

Impact Analysis

The traffic impact analysis included an evaluation of the Project's impact to bicycle and pedestrian facilities within the Project's study area. There is a Class I Bicycle/Recreational Trail planned within the study area based on information provided in Fresno County's Bicycle/Trail Master Plan. As shown in the maps included in Appendix K of the TIS (DEIR Appendix K), there is a planned Class I facility along Academy Avenue at Central Avenue. All planned bicycle/pedestrian facilities will be designed in accordance with Fresno County policy and should eliminate any and all potential significant hazards to bicyclists and pedestrians.

The Class I and Class II facilities crossing Central/Goodfellow Avenue within the study area do so at traffic controlled intersections. There is a four-way (all-way) stop at Central/Goodfellow Avenue at

Academy Avenue and Newmark Avenue. Though traffic within the study area is expected to increase over time, these traffic control devices will help maintain pedestrian and bicycle safety within the study area. The Project does not significantly impact the existing or planned bicycle and pedestrian facilities in the Project study area and therefore does not trigger any fair share contribution for bicycle or pedestrian improvements. This impact is considered to be less than significant.

Level of Significance Before Mitigation

Less Than Significant

Mitigation Measures

None required

Level of Significance After Mitigation

Not applicable

3.12.6.7 Accelerate Damage to Off-site Roads**Impact Statement**

Impact TRANS-7: Would truck traffic generated by the Project result in the Traffic Index (TI) increasing by a factor of 0.5? (**Fresno County Guidelines**)

Impact Analysis

Project truck traffic would accelerate damage and decrease the life expectancy of pavement on the study area roads. Pavement and road conditions can be evaluated using a TI. The TI is a measure of the number of truck-equivalent single-axle loads expected over the design period of a particular roadway. An increase in the TI as a result of a project's traffic or regional growth creates a corresponding decrease in the expected life of the existing pavement. The actual decrease in the life of the pavement for a given increase in TI is dependent upon variable factors such as existing asphalt concrete thickness, aggregate base thickness, and strength of the subgrade soils (R-values).

If truck traffic generated by a project results in the TI increasing by a factor of 0.5, it is considered potentially significant and the project is required to mitigate the roadway structural section to accommodate the increase in truck traffic. Results of the analysis are shown in Table 3.12-12. Results show that the Project would impact seven (7) out of eleven (11) of the roadways analyzed because the Project's truck traffic results in the TI increasing by a factor of 0.5 or greater. Therefore, the Project could have a significant impact and the Project shall contribute its fair share cost for the purposes of improving the structural section of the impacted street segments.

Level of Significance Before Mitigation

Potentially Significant

Mitigation Measures**Mitigation Measure TRANS-3**

The Project will contribute its fair share cost for the purposes of improving the structural section of the impacted street segments.

Central Avenue

McCall Avenue and Bethel Avenue

Bethel Avenue and Academy Avenue

Academy Avenue and Newmark

Newmark Avenue and Riverbend Avenue

McCall Avenue

SR 180 (Kings Canyon) and Jensen Avenue

Jensen and North

North Avenue and Central Avenue

Level of Significance After Mitigation

Mitigation Measure Trans-3 requires that the Project applicant enter into traffic mitigation agreements with the County and Caltrans and requires the applicant to contribute proportional fair share funding toward the improvements identified above. The traffic mitigation agreements will establish the payment amounts and timing of the payments. The post-mitigation measures would result in a less than significant impact; however, even with the applicant's contribution of the Project's proportional fair share of funding for these improvements, the improvements necessary to achieve acceptable level of service may not occur prior to the Project's introduction of additional vehicle trips due to issues such as lack of funding. Therefore, the Project's impact described above is considered significant and unavoidable.

The manner in which equitable fair share responsibility is calculated is discussed in Section 3.12.6.8.

3.12.6.8 Equitable Fare Share Responsibility

According to the Caltrans “Guide for the Preparation of Traffic Impact Studies, “ the intent of determining the equitable responsibility for mitigation measures is to provide a starting point for early discussions to address traffic mitigation equitability and to calculate the equitable share for mitigating traffic impacts. The formulas used to calculate the equitable share responsibility to Caltrans and Fresno County facilities is as follows:

Caltrans

Equitable Share = (Project Trips)/(Future Year Plus Project Traffic – Existing Traffic)

Fresno County

Equitable Share = (Project Trips)/(Future Year Plus Project Traffic)

Table 3.12-16 shows the equitable share responsibility for improvements to Caltrans and Fresno County facilities as described above, with the exception of the improvements identified at the SR 99 at Central Avenue interchange. Caltrans has already identified improvements at the interchange and the Project’s fair-share to those improvements are discussed below. The equitable share responsibility shown in Table 3.12-16 is the result of LOS enhancements related to capacity. Caltrans has also determined that its facilities at Manning Avenue and SR 99 would require improvements in order to accommodate projected future demand and has required that the proposed Project identify trips to the Manning Avenue at SR 99 interchange. Table 3.12-17 identifies the number of trips generated by the Project that will impact Caltrans’ facilities at the SR 99 at Manning Avenue and Central Avenues interchanges and the corresponding fee that the Project is responsible for. Caltrans has informed the Project traffic consultant that, because there are no plans to widen SR 180 between McCall Avenue and Temperance Avenue in the foreseeable future, Caltrans will not accept fair-share funds from any project for any improvements to widen that segment of SR-180.

San Joaquin Valley Air Pollution Control District Rule 8061.5.1.1.1.1 requires new paved roads or modifications to existing paved roads, with projected annual average daily vehicle trips of 500 vehicles or more, to be constructed with paved shoulders. Therefore, fair share costs for road improvements that meet the definition of this rule will include paved shoulders.

Table 3.12-18 shows the equitable share responsibility to Fresno County facilities related to pavement structure.

Table 3.12-16. Equitable Fair Share Responsibility

Intersections	Existing	Project Trips	Cumulative Year 2035 Plus Project	Fair Share Percentage
McCall Avenue / Jensen Avenue • Eastbound approach: add 1 left turn lane and 1 right turn lane • Westbound approach: add 1 right turn lane • Northbound approach: add 1 left turn lane, 1 through lane, and 1 right turn lane • Southbound approach: add 1 left turn lane, 1 through lane, and 1 right turn lane	1,735	311	3,666	8.5%
McCall Avenue / North Avenue • Install Traffic Signal	702	311	1,676	18.6%
Academy Avenue / Central Avenue • Install Traffic Signal	668	344	1,933	17.8%
McCall Avenue / Central Avenue • Install Traffic Signal	461	317	1,379	23.0%
McCall Avenue / SR 180 • Northbound approach: 1 through lane, and 1 right turn lane • Southbound approach: add 1 through lane and 1 right turn lane	2,121	303	5,139	10.0%
McCall Avenue / SR 180 • Northbound approach: add 1 left turn lane	2,121	303	5,139	*
Segments				
McCall Avenue				
SR 180 to Jensen Avenue • Northbound direction: add 1 travel lane • Southbound direction: add 1 travel lane	741	303	1,859	16.3%
Jensen Avenue to North Avenue • Northbound direction: add 1 travel lane	324	311	825	37.7%

*Caltrans has recommended that these improvements be implemented prior to the Project's opening day.

Source: VRPA, 7/2014 (Appendix K)

Table 3.12-17. Project's Fair Share Cost to SR 99 at Manning Avenue and Central Avenue Interchanges

Improvement	Number of Project Trips Impacting Facility	Cost per Trip	Fair Share Cost
Manning Avenue			
SR 99 NB Off-Ramp to Manning Avenue – Traffic Signal	18	\$420	\$7,560
SR 99 SB Off-Ramp to Manning Avenue – Traffic Signal	9	\$250	\$2,250
Manning Avenue between SR 99 SB Off-Ramp and SR 99 NB Off-Ramp – Widen overcrossing, WB Left at NB Ramps	9	\$1,860	\$16,740
Central Avenue			
SR 99 SB Off-Ramp to Central Avenue – Traffic Signal and dedicated right turn lane	3	\$800	\$2,400

Source: VRPA, 7/2014 (Appendix K)

Table 3.12-18. Equitable Fair Share Responsibility for Traffic Index (TI) Impacts

Segments	Project Trips (AADTT)	Cumulative Year 2035 Plus Project (AADTT)	Fair Share Percentage
Central Avenue			
McCall Avenue and Bethel Avenue	342	743	46.0%
Bethel Avenue and Academy Avenue	342	806	42.4%
Academy Avenue and Newmark Avenue	370	946	39.1%
Goodfellow			
Newmark Avenue and Riverbend Avenue	370	919	40.3%
McCall Avenue			
SR 180 (Kings Canyon) and Jensen Avenue	327	533	61.4%
Jensen Avenue and North Avenue	335	502	66.7%
North Avenue and Central Avenue	335	454	73.8%

AADTT = Average Annual Daily Truck Traffic

Source: VRPA, 7/2014 (Appendix K)

3.12.7 Cumulative Level Impacts and Mitigation Measures

The geographic context for cumulative impacts for transportation and traffic includes the cities of Reedley and Sanger, and the unincorporated County surrounding the Project site.

Impact TRANS-1: Would the Project, when considered in conjunction with other cumulative projects, conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? **(CEQA Guidelines Threshold Criteria (a))**

Regionally, all proposed projects are assessed for potential impacts due to increased traffic volumes, or impacting capacities of the street system on an individual basis. Roadway capacities and traffic loading are analyzed as part of each project's traffic impact analysis. If project impacts are projected to occur, the project proponent is required to mitigate the impact to a level of less than significant either through direct project construction or fair share contribution. Each of the cumulative projects identified on Table 3-1 has been evaluated or will be evaluated for their potential impacts to transportation and traffic on a localized and regional level. The individual project approval processes have identified or will identify both project related and cumulative traffic impacts that would be mitigated through project related construction and fair share contribution toward mitigation of regional impacts. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the potential cumulative traffic impacts remain significant and unavoidable.

Projects 1 through 3 (Carmelita, Sanger-Centerville (Vulcan Materials) and Kings River Sand and Gravel (CMI) were specifically evaluated in the TIS. Trip generation and distribution information for the approved/pending projects was based on information found in their corresponding TIS reports. Trip generation and distribution information are provided in Appendix F and the TIS (located in Appendix K of this DEIR). Figure 3.12-11 shows the locations of these projects with respect to the Project. Figures 3.12-12 and 3.12-13 show the AM and PM peak hour trips for cumulative project traffic. The PCE factors used in the respective TIS's for these projects are reflected in the Existing Plus Approved/Pending scenario, the Existing Plus Project Plus Approved/Pending scenario and the Year 2015, 2017, 2019, and Cumulative 2035 No Project and Plus Project Scenarios.

An Existing Plus Approved/Pending Scenario was analyzed to include existing traffic plus traffic generated by the Approved/Pending Projects analyzed in this TIS. The resulting traffic is shown in Figures 3.12-14 and 3.12-15. An Existing Plus Project Plus Approved/Pending Scenario was analyzed to include existing traffic plus traffic generated by the Project and traffic generated by cumulative projects as discussed in Section 3.12.6. The resulting traffic is shown in Figures 3.12-16 and 3.12-17.

The cumulative impacts of the Project were also analyzed considering future traffic conditions, approximately twenty years after the assumed opening day of the Project, or in this case the year 2035. The levels of traffic expected in 2035 relates to the cumulative effect of traffic increases resulting from the implementation of the General Plans of local agencies, including the City of Fresno and Fresno County. Traffic conditions without the Project in the Year 2035 were estimated using the Fresno COG regional travel model. Future traffic forecasts along study area roadway segments were estimated by utilizing methodologies published by Fresno COG using the TurnsW32 program. This process is summarized in Section 3.12.6. Traffic conditions resulting from this scenario are shown in Figures 3.12-30 and 3.12-31.

The addition of Project trips, which were distributed to the roadway system using the trip distribution percentages shown in Figures 3.12-5 and 3.12-6, were added to Cumulative 2035 No Project traffic volumes. This leads to the results shown in Figures 3.12-32 and 3.12-33.

Projects 4 through 7 (Santa Fe Aggregates, Sanger Crossing Apartment, Pitman Farms and Family Dollar Store) have either completed or are currently being evaluated in the manner discussed above.

Since Projects 1 through 7 either have or will be required to adhere to the requirements identified within their individual traffic impact study and these studies are or will need to be approved by the County Engineer, cumulative significant impacts are avoided on a regional basis. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the potential cumulative traffic impacts remain significant.

The Project would not contribute to or impact mass transit and non-motorized travel components of the regions circulation system. However, as discussed in Section 3.12.6, the Project would contribute to growth in regional traffic. This growth is generally consistent with regional growth projections identified

within the County General Plan. Planned roadway improvements and those for which the Project would be required to contribute a proportional fair share funding as specified in the identified mitigation measures would ensure cumulative traffic increases do not exceed the roadway system capabilities. Although implementation of the required traffic mitigation measures would reduce future cumulative traffic impacts to less than significant, it is not known with certainty when these improvements will actually be implemented. As a result, the potential cumulative traffic impacts remain significant and unavoidable.

Impact TRANS-2: Would the Project, when considered in conjunction with other cumulative projects, conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? **(CEQA Guidelines Threshold Criteria (b))**

Regionally, all proposed project are assessed for potential impacts due to increased traffic volumes, or impacting capacities of the street system on an individual basis. Roadway capacities and traffic loading are analyzed as part of each project's traffic impact analysis. If project impacts are projected to occur, the project proponent is required to mitigate the impact to a level of less than significant either through direct project construction or fair share contribution. If the projected impact will occur outside the lead agency's jurisdiction, the project proponent is required to contribute its fair share cost to redesigning and constructing any necessary improvements. Each of the cumulative projects identified on Table 3-1 has been evaluated or will be evaluated for their potential impacts to transportation and traffic on a localized and regional level. The individual project approval processes have identified both project related and cumulative traffic impacts that would be mitigated through project related construction and fair share contribution toward mitigation of regional impacts. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the potential cumulative traffic impacts remain significant and unavoidable.

On a Project level, Section 3.12.6 discusses the potential short term and long term impacts on identified roadway intersections and roadway segments. These roadway intersections and segments were analyzed for both general traffic-related growth occurring and directly attributable to the Project traffic. Planned roadway improvements and those for which the Project would be required to contribute proportional share funding as specified in the mitigation measures defined in Section 3.12.6 would ensure cumulative traffic increases do not exceed specified roadway system capacities. Although implementation of the required traffic mitigation measures would reduce future cumulative traffic impacts to less than significant, it is not known with certainty when these improvements will actually be implemented. As a result, the potential cumulative traffic impacts remain significant and unavoidable.

Impact TRANS-3: Would the Project, when considered in conjunction with other cumulative projects, result in any changes in air traffic patterns or present a substantial safety risk? **(CEQA Guidelines Threshold Criteria (c))**

Regionally, none of the cumulative projects identified on Table 3-1 have been determined to or are anticipated to increase air-related traffic levels. These projects have been or will be evaluated in conjunction with their respective approval requirements, including FAA standards and for consistency with the General Plan. Thus the overall cumulative impact would be less than significant.

On a project level, the facility and equipment heights would not intrude or obstruct navigable airspace or result in a change in location that would result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Therefore, the Project would not make a cumulatively considerable contribution to this impact, and the Project cumulative impact to air traffic patterns would be less than significant.

Impact TRANS-4: Would the Project, when considered in conjunction with other cumulative projects, substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? **(CEQA Guidelines Threshold Criteria (d))**

Regionally, the projects identified on Table 3-1 have been or will be evaluated in conjunction with their respective approval requirements, including TI standards and for consistency with the General Plan. Adherence to the General Plan requirements and conditions of approval for the cumulative projects ensures that these projects do not create a cumulative impact. Therefore, overall cumulative impacts would be less than significant.

On a project level, the Project design and implementation of the site access mitigation measure (MMTrans-2) would alleviate potential traffic hazards. The Project would not introduce a design feature such as sharp curves or dangerous intersections. With implementation of the identified mitigation measures, the Project would not make a cumulatively considerable contribution to this impact, and the Project's cumulative traffic hazard impact would be less than significant.

Impact TRANS-5: Would the Project, when considered in conjunction with other cumulative projects, result in inadequate emergency access? **(CEQA Guidelines Threshold Criteria (e))**

Regionally, the County's emergency response agencies (police and fire departments) typically review project designs to ensure adequate emergency access is available. The approval process for the cumulative projects identified in Table 3-1 would require adherence to the respective emergency response agency's requirements. Therefore, the overall cumulative impacts are considered less than significant.

The Project is located in a rural area away from other major residential, commercial or industrial establishments which would interfere with emergency vehicles. The Project is in the vicinity of SR 180, a major roadway, and the Project site access road would be paved. These features or conditions would be adequate in providing emergency access to the facility. Furthermore, the facility would not interfere with emergency vehicles responding to other locations in the region and therefore cumulative emergency access impacts are determined to be less than significant.

Impact TRANS-6: Would the Project, when considered in conjunction with other cumulative projects, conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? **(CEQA Guidelines Threshold Criteria (f))**

Regionally, the Cities of Reedley and Sanger along with the County's General Plan contain adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities. It is assumed that approval of the cumulative projects identified in Table 3-1 ensures adherence to these requirements. Therefore the projects do not create a cumulative significant impact and overall cumulative impacts would be less than significant.

On a project level, the Project would not conflict with adopted policies, plans or programs supporting alternative transportation. Thus, the Project would not make a cumulatively considerable contribution to this impact, and the Project's cumulative impact to public transit, bike, and pedestrian plans would be less than significant.

Impact TRANS-7: Would truck traffic generated by the Project, when considered in conjunction with other cumulative projects, result in the TI increasing by a factor of 0.5? **(Fresno County Guidelines)**

Regionally, all proposed project are assessed for potential impacts to the structural condition of the roadway due to increased traffic volumes. If truck traffic generated by a project results in the TI increasing by a factor of 0.5, it is considered potentially significant. The project would be required to mitigate the roadway structural section to accommodate the increase in truck traffic to a level of less than significant either through direct project construction or fair share contribution. Each of the cumulative projects identified on Table 3-1 has been evaluated or will be evaluated for their potential impacts to the TI. The individual project approval processes have identified or will identify both project related and cumulative traffic impacts that would be mitigated through project related construction and fair share contribution toward mitigation of regional impacts. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the potential cumulative traffic impacts remain significant and unavoidable.

On a project level, Table 3.12-12 indicates that the TI for several street segments will increase by a factor of 0.5 or greater with the addition of the proposed Project truck traffic. As a result, the Project will contribute its fair share cost for the purposes of improving the structural section of the impacted street segments. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the Project potential cumulative impacts remain significant and unavoidable.

3.12.8 Alternatives to Significant Effects

No Project Alternative

The No Project Alternative would avoid potentially significant environmental impacts to Traffic. Traffic impacts would depend on where aggregate material would be supplied from to make up the loss of reserves and production capacity of the Project site. Aggregate material would continue to be transported from other aggregate sources located farther away from the Fresno-area market resulting in additional County-wide impacts to traffic, greenhouse gases and air quality. Furthermore, the Project would employ electrified equipment to do tasks commonly performed by diesel fueled equipment at other mines; therefore, the GHG impact would be increased by this alternative.

Reduced Annual Production Alternative:

The reduction in truck traffic due to limiting sales would incrementally decrease truck traffic on the local road system but would not avoid or lessen a potentially significant impact. If local construction demand is greater than what could be supplied from the Project site, then aggregate material would need to be transported from another aggregate source which could be further away. In addition, impacts to traffic would be extended over the longer period, i.e. 90 years instead of 75 years. Thus, on a County-wide basis, the Reduced Annual Production Alternative would have equal or greater (depending on the exact location of the alternative supply location) traffic impacts than the Project.

Reduced Project Size Alternative

Truck traffic impacts on the local road system over the life of the Project would be reduced by 5 years but would not avoid or lessen a potentially significant impact. The 5 million tons of aggregate material not available from the Project site would be transported from another aggregate source which could be further away. Thus, on a County-wide basis, the Reduced Size Alternative would have equal or greater (depending on the exact location of the alternative supply location) traffic impacts than the Project.

Reduced Mining Depth Alternative

This alternative would not reduce short-term, truck traffic generation or its impact to circulation systems. The alternative would not avoid or substantially lessen a potential long-term significant and unavoidable traffic impact associated with the Project. However, the demand for aggregate products would need to be met from an alternative aggregate supply. Therefore, depending on the location of that supply source, the County-wide traffic impacts under the Reduced Mining Depth Alternative could be equal to, or greater than, the Project.

Different Phasing Alternative

This alternative was considered to determine if modifying the phasing plan would avoid or lessen any potentially significant impacts. Under this Alternative, the Project footprint, depth of mining and duration of the Project would remain the same. However, mining would be initiated in the phases south of Goodfellow Avenue instead of north of Goodfellow Avenue as in the Project. This alternative would not affect traffic impacts

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4.0 ALTERNATIVES

This section describes a range of project alternatives and compares the associated potential environmental impacts to those of the Project. Section 4.1 discusses the CEQA requirements for considering alternatives to the Project, Section 4.2 provides a summary of the Project, Section 4.3 discusses the alternatives considered but rejected from further analysis, Sections 4.4 through 4.8 provide analyses of the alternatives as compared to the Project, and Section 4.9 identifies the environmentally superior alternative, as required by CEQA.

4.1 CEQA Requirements for Analysis of Alternatives

As discussed in Section 1.9, the CEQA Guidelines specify that an EIR must describe a reasonable range of alternatives to the project, or to the location of the project, which could feasibly attain most of the basic project objectives (Guidelines §15126.6(a)). The EIR must focus on alternatives that are capable of eliminating or substantially reducing the significant adverse impacts caused by the project (Guidelines §15126.6(c)), and alternatives to the “whole of the project” rather than the project’s component parts. An EIR must include an alternatives analysis even if the EIR concludes that the project will not cause any significant adverse impacts.

The “no project” alternative, which considers impacts that would occur if existing conditions continue, must be considered (Guidelines §15126.6(e)), and the EIR must also identify the environmentally superior alternative. If the “no project” alternative is the environmentally superior alternative, the EIR must identify an environmentally superior alternative from among the other alternatives (Guidelines §15126.6(e)(2)). The EIR should not consider alternatives “*whose effect cannot be reasonably ascertained and whose implementation is remote and speculative*” (Guidelines §15126.6(f)(3)). An EIR need not evaluate an alternative that is considered speculative, theoretical, or unreasonable. Not every potentially feasible alternative need be considered; rather, the relevant test is whether a “reasonable range” of feasible alternatives is considered for that particular project (Guidelines §15126.6(a)).

4.2 Project Objectives

The Project Objectives are as follows:

1. Provide a reliable and sustainable, local source of high quality aggregate to help meet the current and long-term demand (75 years) for construction materials in Fresno County.
2. Create additional, long-term supply of local aggregate reserves.
3. Utilize aggregate reserves from property already designated by the State and County as MRZ-2 (Mineral Resource Zone containing mineral resources of regional significance, i.e. sand and gravel).
4. Utilize high quality aggregate resources that meet the California Department of Transportation’s stringent specifications for use in PCC and AC.

5. Provide an additional local source of construction aggregate with enough annual sales capacity (1.25 million tons) to encourage a healthy competitive market.
6. Obtain aggregate resources with access to an efficient local road network and State Highway system.
7. Create a project that would not require dewatering of groundwater.
8. Create an environmentally sound project that would balance the recovery of the aggregate resource with the protection of other resources including wildlife habitat, groundwater, surface water, and air quality.
9. Create a project that will return a significant amount of mined land back to farming.
10. Create local quality jobs, while also benefiting local downstream businesses and creating enhanced tax revenue to the County.

4.3 Alternatives Considered and Rejected from Further Analysis

4.3.1 Alternative Location

Riverbend Sand and Gravel is proposing to mine construction grade aggregate (sand and gravel) from 619 acres located immediately east and north of the Kings River. The mined aggregate would be processed at an on-site processing plant located north of Goodfellow Avenue.

The Project Site is located along the Kings River, which is an area identified by the State of California as a MRZ-2. An MRZ-2 is defined as an area where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists. While there would be other locations within the MRZ-2 area with adequate resources, the Project is located on a site with proven aggregate resources between two existing aggregate mines with proven reserves. Developing a new location would require extensive exploration to determine aggregate quality and quantity and environmental studies to determine potential significant impacts. The CEQA Guidelines recognize that in some cases there are no feasible alternative sites. In the discussion under this topic, the CEQA Guidelines state: *“in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location.”* (14 CCR §15126.6(f)(2)(B).)

CEQA Guidelines Section 15126.6 (f)(2)(A) states that *“only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the Draft EIR.”*

Implementation of the Alternative Location alternative would require the relocation of the Project to another potential location within the County. The start-up of an aggregate mine and related processing plants is a complex process having a variety of technical and environmental issues. An Alternative Site would require control of a land block containing a high quality aggregate resource that was also large enough to support a major aggregate mine with crushing and screening, asphalt, and concrete plants..

Site-specific studies would be required to evaluate a new site and its adequacy to support mining and processing operations. Issues to be addressed for a new site are dominated by its land availability and suitability. The site must be available for purchase or long-term lease with abundant aggregate resources to justify the company's investment. Overall feasibility studies would have to be prepared similar to the Project to evaluate the following environmental and logistical concerns:

- Quality and quantity of aggregate resource and its suitability to meet construction specifications for concrete and asphalt for up to 75 years;
- Ownership of a land block large enough to support a major aggregate mine;
- Water and electric service availability;
- Distance to markets, possibly increasing haul truck mileage and air emissions;
- Available truck routes and impacts to roads and traffic;
- Existing and future surrounding land uses;
- Effects of the mining and processing plants on these surrounding land uses including visual aesthetics, dust, light, and noise;
- Potential impacts to groundwater, surface water, biological resources, and cultural resources; and
- Reclamation and use of site after mining.

An alternative location would either require excavated materials to be transported to the existing plants on public roads that may be inadequate or new private haul roads, or new plants would need to be developed at the alternative site. Both of these scenarios would create additional environmental impacts at a new location related to traffic, noise, air quality, and possibly biological resources.

The elimination of impacts at the Project Site is also analyzed for the No Project Alternative. No alternative sites have been identified, for which enough information exists to analyze whether they would meet any of the basic Project objectives, or to compare impacts to the proposed Project's impacts. Therefore, an alternative location was not considered further.

4.3.2 Alternative Mining Method

Once the topsoil and overburden are removed by conventional equipment, the Project proposes to use a "wet mining" method utilizing an electric dragline that does not require dewatering of the excavation. Material would be transferred to the process plant via overland conveyor belts.

An alternative mining method would utilize conventional mining to excavate the aggregate which would require dewatering of the active mining area to allow "dry mining" beneath the water table. Conventional mining would use diesel-powered construction equipment to extract aggregate from the

deposit. Material would be then loaded onto diesel-powered haul trucks for transport to an on-site aggregate plant.

Diesel exhaust emissions and dust generated by conventional mining methods using diesel-powered excavator and haul trucks would be substantially increased compared to the proposed methods. Conventional “dry mining” would also create increased local hydraulic impacts due to de-watering. Therefore, an alternative mining method was not further considered since the proposed method would create less air quality and hydrologic impacts than conventional mining methods.

4.3.3 Alternative Reclamation or End Use

The proposed reclamation plan includes the creation of approximately 268 acres of reclaimed farmland and approximately 351 acres of riparian (33 acres) and open water (318 acres) wildlife habitat. The site will support significantly more acres of native habitat at Project completion (approximately 558 acres) than it currently does (approximately 217 acres), an increase of approximately 257%. In addition, the quality of the habitat created on the Project site will be significantly higher than what currently exists on the site. At Project completion, the site will be able to support a higher diversity, density, and abundance of wildlife and plant species than under the current conditions. The proposed mining/reclamation Project will result in a net benefit to the region in that it will provide a significant habitat area for wildlife and native vegetation.

An alternative end use would be to return more acres back to farmland. Due to the depth of mining (100 feet) and the volume of aggregate material that would be removed, it is not possible to reclaim the entire Project site to agricultural land without importing fill. Importing fill to replace all the aggregate removed would be prohibitively expensive and would increase GHG emissions. Under the Reduced Mining Depth Alternative reclamation of an additional 104 acres back to farmland is already discussed. Therefore, an Alternative Reclamation or End Use was not considered further.

4.3.4 Reduced Project Duration Alternative

The Project would mine aggregate from the site for approximately 75 years. Under the Reduced Project Size Alternative and the Reduced Mining Depth Alternative, the impacts associated with a reduced Project duration are already discussed. Therefore, a separate Reduced Project Duration Alternative was not considered further.

4.3.5 Transport of Aggregate by Rail Alternative

One of the scoping comments was that consideration should be given to transporting aggregate by rail. During the hearings on the Jesse Morrow Mountain aggregate project in Fresno County in 2012 and during the Carmelita Mine project hearings in 2012 and 2013 it was suggested that the Selma Rail Yard facility approved in 2011 along Freeway 99 near the City of Selma could handle much of the aggregate demand in Fresno. However, as indicated at the Jesse Morrow Mountain and Carmelita hearings, rail hauling is not an economically feasible alternative because the average trucking cost for aggregate in

this region is only \$10.50/ton vs \$27/ton to transport aggregate by rail. In addition there would be the cost to load the aggregate on to the railcars, the cost to off-load aggregate at the Selma rail yard, the cost to load the trucks that would deliver aggregate to the end user, and the cost to deliver aggregate to the end user. There would also still be the same number of truck trips to pick up and distribute aggregate from the Selma rail site and there would be additional air emissions from rail.

County Planning staff has also determined that only 780,000 tons of aggregate a year could be shipped from the Selma Rail Yard since only 208 truck trips/day were evaluated in the Traffic Impact Study for that rail yard project. The Riverbend Project proposes 513 truck trips per day to sell 1.25 million tons of aggregate a year.

Finally, many if not most of the environmental impacts that would be caused by the proposed mine would generally be incurred in some other location in California in order to supply aggregate via rail to the Selma site. Thus, from an overall environmental impacts analysis the impacts would be moved, not avoided, and air emissions would be increased by rail haul given the further hauling distance.

For all of the above reasons, the transport of aggregate by rail was not considered further.

4.4 No Project Alternative:

Under this alternative, no mining would occur and agricultural activities would continue on the proposed 619-acre Project site.

The No Project Alternative eliminates near-term mineral development of the Project site in conflict with the existing state MRZ-2 classification, the State's designation of the site as having aggregate deposits of regional significance, and County General Plan and Zoning Designation. The loss of this aggregate resource in the near-term market could cause future shortages of construction material in the Fresno region.

The No Project Alternative would not meet any of the applicant's objectives as described above in Section 4.2.

The No Project Alternative would be considered environmentally superior because it would have no additional site impacts to Aesthetics, Biological Resources, Cultural, Hydrology, Land Use/Agriculture, and Noise. The No Project Alternative would avoid potentially significant environmental impacts to Agricultural Resources, Air Quality, and to Traffic. Traffic impacts would depend on where aggregate material would be supplied from to make up the loss of reserves and production capacity of the Project site. Aggregate material would continue to be transported from other aggregate sources located farther away from the Fresno-area market resulting in additional County-wide impacts to traffic, greenhouse gases and air quality. Furthermore, the Project would employ electrified equipment to do tasks commonly performed by diesel fueled equipment at other mines. Thus, the GHG impact would be increased by this alternative.

4.5 Reduced Annual Production Alternative

This alternative was considered to determine if limiting production would avoid or lessen any potentially significant impacts. Under this alternative annual sales would be limited to 1.0 million tons as compared to the requested 1.25 million tons. The Reduced Annual Production Alternative would reduce annual production by 20%, thereby extending the life of the mining operation by 20% from 75 years to 90 years in order to recover all the resources.

There would be no change in the following impacts between the Reduced Annual Production Alternative and the Project except for extending the duration of the mining and processing activities: Aesthetics, Biological Resources, Cultural Resources, Geology, Hazardous Materials, Hydrology, Land and Use/Agriculture. The principal issues affected by reducing annual sales are Air Quality, Greenhouse Gases, and Traffic.

Air Quality: The reduction in aggregate production and sales would incrementally decrease annual excavation, processing, and truck emissions but would not avoid or substantially lessen a potentially significant air impact. Additionally, to meet Fresno County's aggregate demand, the 25 million tons not generated by the Project would need to be transported from other locations, which could be farther from the local market. Thus, on a County-wide basis, the Reduced Annual Production Alternative would have equal or greater (depending on the exact location of the alternative supply location) air quality impacts than the Project.

Greenhouse Gases: As explained above, the reduction in aggregate production would result in production elsewhere. Because the Project features close proximity to the market and the use of electrified equipment, GHG emissions from the Project site would be less than or equal to those from other mines. Thus, the GHG impact would be increased by the Reduced Annual Production Alternative.

Traffic: The reduction in truck traffic due to limiting sales would incrementally decrease truck traffic on the local road system but would not avoid or lessen a potentially significant impact. If local construction demand is greater than what could be supplied from the Project site, then aggregate material would need to be transported from another aggregate source which could be further away. Thus, on a County-wide basis, the Reduced Annual Production Alternative would have equal or greater (depending on the exact location of the alternative supply location) traffic impacts than the Project.

Impacts to both air quality and traffic would be extended over the longer period, i.e. 90 years instead of 75 years.

The Reduced Annual Production Alternative would not meet or would be contrary to the applicant's following objectives:

- *Provide an additional local source of construction aggregate with enough annual sales capacity (1.25 million tons) to encourage a healthy competitive market.*

Annual sales would be reduced from 20% from 1.25 million tons to 1.0 million tons.

- *Create local quality jobs, while also benefiting local downstream businesses and creating an enhanced tax revenue to the County.*

Local quality jobs benefiting local downstream businesses and creating an enhanced tax revenue to the county could be reduced by 20%.

The Reduced Annual Production Alternative would only moderately reduce air quality and traffic impacts, but would not substantially avoid or lessen any potentially significant impacts. Therefore, this Alternative would not be considered environmentally superior to the Project. The Reduced Annual Production Alternative meets some of the objectives of the Applicant, but to a lesser degree than the Project.

4.6 Reduced Project Size Alternative

This alternative is considered in order to reduce potential impacts to the biological resources along the Kings River and to create a larger buffer between the proposed mining operations and homes to the east across Riverbend Avenue. This alternative would include the following:

- The proposed 50-foot setback from the existing riparian habitat would be increased by 100-feet to a 150-foot setback along the Kings River. The additional habitat buffer area would amount to about 25 acres.
- The 100-foot setback from Riverbend Avenue would be increased by 100-feet to a 200-foot setback. The additional setback from the road would amount to approximately 15 acres.
- Since less land (40 acres) will be available for mining, this alternative would reduce the available aggregate reserves by approximately 5 million tons or by 7.0 %and would reduce the lifespan of the project by approximately 5 years.

There would be no change in the following impacts between the Reduced Project Size Alternative and the Project except for the duration of the mining and processing activities: Air Quality, Cultural Resources, Hazardous Materials, Hydrology, Geology, and Traffic. The principal issues affected by this reduced size alternative are biological resources, land use and agriculture, and noise.

Air Quality: The Reduced Project Size Alternative would incrementally decrease excavation, processing, and truck emissions because the Project life would be reduced by 5 years, but this alternative would not avoid or substantially lessen a potentially significant air impact. Additionally, to meet Fresno County's aggregate demand, the 5 million tons not generated by the Project would need to be transported from other locations, which could be farther from the local market. Thus, on a County-wide basis, the

Reduced Annual Production Alternative would have equal or greater (depending on the exact location of the alternative supply location) air quality impacts than the Project.

Biological Resources: The assessment of potential impacts to biological resources for the Project determined that no additional impacts would occur given the planned implementation of avoidance measures because the proposed mine operations would not occur any closer to existing riparian habitat than farming activities that currently take place. The Reduced Project Size Alternative would eliminate mining within expanded setback area but existing farming activities would continue within that area resulting in no reduction in impacts to biological resources.

Greenhouse Gases: Reducing the footprint would reduce GHG emissions from the Project by limiting the duration of the Project. However, since annual production throughput would not be reduced by the Reduced Project Size Alternative, the annual GHG emissions would be consistent with impacts identified for the Project. Also, depending on the relative proximity of alternative aggregate sources to the market many years from now, material may travel longer distances resulting in greater GHG impacts from this alternative than would occur with the Project.

Land Use/Agriculture: The Reduced Project Size Alternative would reduce permanent agricultural land conversion by 40 acres. Since only 20 acres of the 40 acres to be restricted from mining under this alternative were planned to be reclaimed back to farmland, implementation of this alternative would result in 20 additional acres of farmland, or approximately 7.5 % more than proposed under the Project. The Agricultural Conservation Easement mitigation measure for the Project that reduces potential impacts to less than significant would be applicable to the Reduced Mining Depth Alternative. Therefore, implementation of this alternative would not avoid or substantially lessen any potentially significant impacts to agricultural resources.

Noise: The noise assessment for the Project determined that no significant noise impacts would occur at receptors east of Riverbend Avenue due to the implementation of avoidance measures. The Reduced Project Size alternative would reduce noise impacts to only a minor degree and, therefore, would not avoid or substantially lessen any potentially significant noise impacts.

Traffic: Truck traffic impacts on the local road system over the life of the Project would be reduced by 5 years but would not avoid or lessen a potentially significant impact. The 5 million tons of aggregate material not available from the Project site would be transported from another aggregate source which could be further away. Thus, on a County-wide basis, the Reduced Size Alternative would have equal or greater (depending on the exact location of the alternative supply location) traffic impacts than the Project.

The Reduced Project Size Alternative would not fully meet the applicant's following objectives:

- *Creating additional long-term supply of local aggregate reserves.*

Available aggregate reserves would be reduced by 5 million tons, a decrease of 7%.

- *Utilize the aggregate reserves from property already designated by the State and County as MRZ-2 (Mineral Resource Zone containing mineral resources of regional significance, i.e. sand and gravel).*

Aggregate resources on the Project site would not be fully utilized, thereby restricting the public from access to a recognized valuable resource.

- *Utilize the high quality aggregate resources that meet the California Department of Transportation's specifications for use in Portland Cement Concrete (PCC) and Asphaltic Concrete (AC) which aggregate is important for quality infrastructure growth and maintenance because of its versatility, value, and relative scarcity.*

The high quality aggregate resources on the site would not be fully utilized thereby restricting the public from access to a recognized valuable resource.

The development of the Reduced Size Alternative would not substantially avoid or lessen any potentially significant impacts and, therefore, would not be considered environmentally superior to the Project.

4.7 Reduced Mining Depth Alternative

This alternative was considered to determine if reducing the mining depth would avoid or lessen any potentially significant impacts. Under the Reduced Mining Depth Alternative the project acreage would remain the same but the maximum depth of mining would be 50 feet bgs as opposed to 100 feet bgs as proposed for the Project.

Under this alternative the following changes to the Project would occur:

- The Project footprint would remain the same. However, since an average 20 feet of topsoil and overburden overlays the aggregate resource, reducing the mining depth to 50 feet from the proposed 100-feet would only provide 30 feet of aggregate material instead of 80-feet. Therefore, available aggregate reserves would be reduced by up to 42 million tons, from 70 to 28 million tons, or by up to 60 %.
- The duration of mining and processing activities would be reduced from approximately 75 years to approximately 30 years as less material would be available for mining.
- Since there would be less mining depth to fill, the mined land reclaimed to farmland would be increased by about 104 acres (Phases 2B, 5 and 7A) or an increase of about 39%.
- The surface area of reclaimed open water habitat would be reduced by about 93 acres, thereby reducing annual surface water evaporation by approximately 30%.
- The reduced depth may make it cost-prohibitive to mine with an electric dragline and require mining with a diesel excavator, potentially causing increased air quality impacts. Use of an

excavator would require dewatering of the active mining area to allow “dry mining” beneath the water table. Dewatering could lower groundwater levels in the surrounding area which would negatively affect existing off-site wells.

- Annual groundwater use for processing would remain the same but long-term use would be reduced by 45 years.

The Reduced Mining Depth Alternative restricts the full mineral development of the Project site in conflict with the existing state MRZ-2 classification, the State’s designation of the site as having aggregate deposits of regional significance, and County General Plan and Zoning Designation. The interim loss of this aggregate resource could cause future shortages of construction material in the Fresno region.

In addition, the shortened life of the Project would require Riverbend, or other aggregate suppliers, to search for another aggregate source to supply the County’s needs. Another mine in the County could potentially have similar or additional significant environmental impacts, and would increase the footprint of aggregate mines in the County.

The Reduced Mining Depth Alternative would not meet the applicant’s following objectives:

- *Create additional, long-term supply of local aggregate reserves.*
The supply of local aggregate reserves would be reduced by 45 years and the Project site’s total contribution would be reduced by up to 60 %.
- *Utilize aggregate reserves from property already designated by the State and County as MRZ-2 (Mineral Resource Zone containing mineral resources of regional significance, i.e. sand and gravel).*

Aggregate resources on the Project site would not be fully utilized thereby restricting the public’s access to a recognized valuable resource.

- *Utilize high quality aggregate resources that meet the California Department of Transportation’s specifications for use in Portland Cement Concrete (PCC) and Asphaltic Concrete (AC), which aggregate is important for quality infrastructure growth and maintenance because of its versatility, value, and relative scarcity.*

Aggregate resources on the site would not be fully utilized thereby restricting the public’s access to a recognized valuable resource.

- *Provide an additional local source of construction aggregate with enough annual sales capacity (1.25 million tons) to encourage a healthy competitive market.*

The supply of local aggregate reserves would be reduced by 45 years and by up to 60%.

- *Obtain aggregate resources with access to an efficient local road network and State Highway system.*

The supply of local aggregate reserves would be reduced by 45 years and by up to 60%.

- *Create local quality jobs, while also benefiting local downstream businesses and creating enhanced tax revenue to the County.*

Local quality jobs benefiting local downstream businesses and creating enhanced tax revenue to the County would be reduced by 45 years.

Potential changes in environmental impacts associated with this Reduced Mining Depth Alternative as compared to the Project are summarized below.

Aesthetics: Impacts from excavation equipment on views to surrounding receptors would not be altered. However, the duration of those impacts would presumably be less as this alternative would operate 45 years less than the Project. Therefore, the Reduced Mining Depth Alternative would lessen long-term aesthetic impacts; however, this is not considered a significant unavoidable impact.

Agricultural Resources: The Reduced Mining Depth Alternative would increase the amount of agricultural land reclaimed by approximately 104 acres. The resulting increase in agricultural land reclamation would be approximately 39 % more than would be reclaimed to agricultural uses under the Project. The Agricultural Conservation Easement mitigation measure for the Project that reduces potential impacts to less than significant would be applicable to the Reduced Mining Depth Alternative. Therefore, implementation of this alternative would not avoid or substantially lessen any potentially significant impacts to agricultural resources.

Air Quality: Annual production throughput and sales would not be reduced by this alternative over the life of the operation. However, mining with a diesel excavator instead of the proposed electric dragline could increase annual emissions resulting from this Alternative. A reduction in Project life would reduce the Project's contribution to long term regional emissions. The Reduced Mining Depth Alternative would substantially lessen a project-specific significant and unavoidable impact. However, the demand that would have been generated by mining the additional 50 feet of reserves at the Project site would need to be satisfied by transporting aggregate from other suppliers, which could be farther from the anticipated market. Thus, on a County-wide basis, the Reduced Mining Depth Alternative could have equal or greater (depending on the exact location of the alternative supply location) air quality impacts as compared to the Project.

Biological Resources: Potential biological impacts associated with the Project would not change with the Reduced Mining Depth Alternative. Thus, this alternative would not avoid or substantially lessen any significant impacts to biological resources.

Geology and Soils: The slope stability avoidance measures established for the Project include design features and BMPs that reduce potential impacts to less than significant that would be applicable to the Reduced Mining Depth Alternative. Therefore, implementation of this alternative would not avoid or substantially lessen any potentially significant impacts to geology and soils.

Greenhouse Gases: Reducing the footprint would reduce GHG emissions from the Project by limiting the duration of the Project but would not reduce the annual emissions upon which GHG impact significance is determined. Depending on the relative proximity of alternative aggregate sources to the market many years from now, material may travel longer distances resulting in greater GHG impacts from this alternative than would occur with the Project. Therefore, this alternative would not avoid or substantially lessen a significant unavoidable impact relating to GHG emissions.

Hazards and Hazardous Materials: A reduction in the depth of disturbance area would not alter the use of hazardous materials in the production process or their potential for spill or contamination. Therefore, the Reduced Mining Depth Alternative would not avoid or substantially lessen any significant hazards and hazardous materials impacts identified for the Project.

Hydrology: Annual use of process water would not be altered by this alternative. Long-term total water consumption associated with aggregate production may be reduced due to a shortened Project life. Additionally, surface water evaporation would be reduced due to a 30% reduction in reclaimed open water habitat. Therefore, this alternative would slightly lessen a potential long-term adverse impact, but would not avoid or substantially lessen the Project's hydrology-related impact.

Land Use/Mineral Resources: The Reduced Mining Depth Alternative would not alter or reduce existing impacts of the Project related to land use. The entire surface acreage of initial agricultural land conversion would not change from the Project and the alternative would still result in the net loss of agricultural land. The alternative therefore will not avoid or lessen a potentially significant impact. This alternative would result in the loss of approximately 45 million tons of mineral resources known to occur in an area classified as a MRZ-2 zone. The alternative will also increase the applicant's operational costs (and thus the cost to the consumer) since overburden will still need to be removed over the same mining area, but less mineral resources will now be available. Therefore, the Reduced Mining Depth Alternative's impacts would be greater than the Project regarding mineral resource conservation because the recovery of a known resource would be reduced by approximately 45 million tons.

Noise: Noise impacts associated with the Project have been mitigated to a less than significant level or the maximum extent feasible. The Reduced Mining Depth Alternative would not further reduce noise generation except by shortening the Project duration. Proximity to noise receptors, disturbance boundaries and operation procedures would not change noise generation levels. Mitigation measures suggested for the Project would be applicable for this alternative. Therefore, the alternative would not avoid or substantially lessen any significant and unavoidable Noise impacts associated with the Project.

Traffic and Circulation: This alternative would not reduce short-term, truck traffic generation or its impact to circulation systems. The alternative would not avoid or substantially lessen a potential long-term significant and unavoidable traffic impact associated with the Project. However, the demand for aggregate products would need to be met from an alternative aggregate supply. Therefore, depending on the location of that supply source, the County-wide traffic impacts under the Reduced Mining Depth Alternative could be equal to, or greater than, the Project.

The implementation of the Reduced Mining Depth Alternative would result in a decrease to impacts associated with the Project related to the long-term conversion of agricultural land and surface water evaporation. Project-specific impacts associated with Air Quality, Greenhouse Gas, and Traffic would be less under the Reduced Mining Depth Alternative because the duration of this alternative would be less than the Project. However, as discussed above, impacts to mineral resources, and County-wide impacts to air quality and greenhouse gas would be greater than the Project. County-wide impacts to traffic would be equal to or greater than the Project.

The Reduced Mining Depth Alternative is considered to be an environmentally superior alternative to the Project by reducing impacts to Aesthetics, Agricultural Resources, Air Quality, Greenhouse Gas, Hydrology, and Traffic. While it is the environmentally superior alternative, it does not meet the Project objectives outlined by the Applicant as described above, and it does not fully utilize County and State designated mineral resources.

4.8 Different Phasing

This alternative was considered to determine if modifying the phasing plan would avoid or lessen any potentially significant impacts. Under this Alternative, the Project footprint, depth of mining and duration of the Project would remain the same. However, mining would be initiated in the phases south of Goodfellow Avenue instead of north of Goodfellow Avenue as in the Project.

The Different Phasing alternative would change the timing of potential impacts of aesthetics and noise to surrounding areas but would not substantially lessen any of the potentially significant, short-term or long-term impacts to Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural, Greenhouse Gas, Hazardous Materials, Hydrology, Geology, Noise, and Traffic. Therefore, this alternative would not be considered environmentally superior to the Project.

4.9 Environmentally Superior Alternative

The No Project Alternative is identified as the environmentally superior alternative. However, when the No Project Alternative is the environmentally superior alternative, CEQA requires that an EIR further identify an alternative other than the No Project Alternative as the environmentally superior alternative. Accordingly, the Reduced Mining Depth Alternative is the environmentally superior alternative. Nonetheless, the Reduced Mining Depth Alternative does not meet many of the Project Objectives and does not fully utilize County and State designated mineral resources, as discussed in Section 4.7 above.

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5.0 OTHER CEQA REQUIRED IMPACT ANALYSIS

This section includes consideration and discussion of other project-related impacts that must be evaluated in the DEIR as described in CEQA Guidelines Section 15126.2 and Section 15130, including (1) cumulative impacts; (2) growth-inducing impacts; (3) summary of the Project impacts, including significant and unavoidable impacts; and (4) significant irreversible environmental changes.

5.1 Cumulative Impacts

5.1.1 CEQA Analysis Requirements

CEQA requires that impacts of cumulative projects be considered in the EIR. The project may have environmental effects that are individually limited, but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects and the effects of probable future projects. (CEQA Guidelines § 15065(a)(3).)

The identification of reasonably foreseeable future projects will be based on the standards of practicality and reasonableness. Reasonably foreseeable future projects include unapproved projects that were undergoing environmental review at the time that the NOP was submitted.

CEQA Guidelines Sections 15130(a) and (b) state:

- a) *An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in Section 15065(c). Where a Lead Agency is examining a project with an incremental effect that is not "cumulatively considerable," a Lead Agency need not consider that effect significant but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.*
- *As defined in Section 15355, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.*
 - *When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. A lead agency shall identify facts and analysis supporting the Lead Agency's conclusion that the cumulative impact is less than significant.*
 - *An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A*

project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The Lead Agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.

- b) *The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact. The following elements are necessary to an adequate discussion of significant cumulative impacts:*

Either:

- *A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or*
- *A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.*

5.1.2 Geographic Scope

The potential for Project-generated impacts to contribute to a significant cumulative impact would arise if the other projects are located within the same geographic area. This geographic area may vary, depending upon the issue and the geographic extent of the potential impact. For example, the geographic area associated with noise impacts would be limited to local areas directly affected by noise, whereas the geographic area that could be affected by air emissions may include the larger regional airshed as well as the local area.

5.1.3 Project Timing

In addition to the geographic scope, cumulative impacts are determined by timing of the other projects relative to the Project. For example, for a group of projects to generate cumulative construction impacts, they must be nearby projects that will occur approximately in the same timeframe. The related projects identified on Table 3-1 may or may not occur simultaneously with the Project, depending upon the schedule of each individual project. Although the timing of the projects is likely to fluctuate due to

schedule changes or other unknown factors, this analysis assumes the identified related projects would be implemented concurrently with implementation of the Project.

5.1.4 Threshold of Significance

CEQA Guidelines Section 15255 defines cumulative impacts as “*two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*” The Guidelines further state:

- a. *The individual effects may be changes resulting from a single project or a number of separate projects.*
- b. *The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

5.1.5 Description of Cumulative Projects and Cumulative Impacts

Table 3-1 provides a list and a brief summary of the projects that were evaluated in regards to potential cumulative impacts. The projects include four mining projects and three non-mining projects. The Carmelita project has completed the entitlement phase but is not yet operational. The Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates mining projects are operational. The non-mining projects are in the entitlement phase and include Sanger Crossing Apartments, Pitman Farms and Family Dollar Store are all located in the City of Sanger. Table 3-1 provides a list and a brief summary of the projects. The cumulative impacts associated with each of the resource areas evaluated are discussed below.

Aesthetics

Would the Project, when considered in conjunction with other cumulative projects, substantially degrade the existing visual character or quality of the site and its surroundings? (CEQA Guidelines Threshold Criteria (c))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store are in the entitlement process and still being evaluated. However, these projects are located in or near the City of Sanger, several miles away from the Project, and would be too distant to have a significant cumulative effect on aesthetics and visual character surrounding the Project. It is also assumed that, if they are approved, these projects will be considered consistent with applicable requirements and the General/Regional Plans.

As discussed in Section 3.1.6.2, the Project would not result in a significant impact and is considered consistent with the County General Plan and the Kings River Regional Plan. Therefore, the Project would not make a cumulatively considerable contribution to this impact, and the Project's cumulative impact is considered less than significant.

Would the Project, when considered in conjunction with other cumulative projects, create a new source of light or glare, which would adversely affect day or nighttime views in the area? (CEQA Guidelines Threshold Criteria (d))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects are either existing or will incorporate lighting requirements and/or mitigation measures that effectively minimize the potential for light or glare from becoming a significant impact. Consequently, the overall cumulative impact would be less than significant.

Sanger Crossing Apartments, Pitman Farms and Family Dollar Store are in the entitlement process and still being evaluated. However, these projects are located in or near the City of Sanger, several miles away from the Project and would be too distant to have a significant cumulative effect on light or glare in the area surrounding the Project. It is also assumed that, if they are approved, these projects will be considered consistent with applicable requirements and the General/Regional Plans.

As discussed in Section 3.1.6.3, the design features incorporated into the Project will minimize the effects of light and glare such that the Project would not result in a significant impact. The Project is considered consistent with the County General Plan and the Kings River Regional Plan. Therefore, the Project would not make a cumulatively considerable contribution to this impact and the Project's cumulative impact is considered to be less than significant.

Agriculture and Forestry Resources

Would the Project, when considered in conjunction with other cumulative projects, convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use? (CEQA Guidelines Threshold Criteria (a))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel and Santa Fe Aggregates projects appear to have cumulatively significant impacts. Carmelita would result in the permanent removal of approximately 583 acres of agricultural land. Sanger-Centerville would convert over 350 acres of agricultural lands during active mining and would reclaim these areas to open water ponds. Kings River would create a net loss of up to 315 acres of agricultural lands. Santa Fe Aggregates is an existing project but will result in the conversion of approximately 100 acres of farmland.

The Sanger Crossing Apartment, Pitman farms, and Family Dollar Store projects are still in the entitlement process and being evaluated but are located in developed areas in or near the City of Sanger and will not involve the conversion of agricultural lands.

As required by Mitigation Measure AG-1 (Section 3.2.6.2) the Project shall conserve agricultural land by acquiring an agricultural conservation easement (ACE) on 351 acres of Important Farmland as classified by DOC's FMMP to mitigate for the 351 acres of Important Farmland on the Project site to be converted to non-agricultural use. After mitigation, impacts to farmland would be less than significant. Therefore, the loss of agricultural lands from the Project in conjunction with the existing or proposed conversion of farmland associated with the related projects would be considered less than cumulatively significant.

Would the Project, when considered in conjunction with other cumulative projects, conflict with existing zoning for agricultural use, or a Williamson Act contract? (CEQA Guidelines Threshold (b))

The County zoning ordinance makes provisions for allowing approval of a mining operation and Mining Reclamation Plan subject to approval of a CUP. This is intended to conserve areas identified as containing valuable mineral deposits, and ensure that mineral resources are recovered efficiently and safely with minimal disruption to surrounding land uses.

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel and Santa Fe Aggregates projects have completed the entitlement phase and appropriate approvals have been received from the County. It was also determined that these projects would not be in conflict with the Williamson Act.

The Sanger Crossing Apartment, Pitman farms, and Family Dollar Store are still in the entitlement process and being evaluated but are located in developed areas in or near the City of Sanger and will not involve the conversion of agricultural lands. Overall cumulative impacts associated with these effects are less than significant.

As discussed in Section 3.2.6.3, the Project is located in MRZ-2 zone and has construction grade aggregate of regional significance. The Project would require County approval of a CUP and would not be in conflict with the Williamson Act. Therefore project-related and cumulative impacts to agricultural zoning and the Williamson Act would be considered less than significant and the Project would not make a cumulatively considerable contribution to these effects.

Would the Project, when considered in conjunction with other cumulative projects, involve other changes in the existing environment which, due to their location or nature, could result in substantial conversion of Farmland to non-agricultural use, substantially impair the productivity of adjacent agricultural areas, or result in conversion of forest land to non-forest use? (CEQA Guidelines Threshold Criteria (e))

The Project and Carmelita, Sanger-Centerville, Kings River Sand and Gravel and Santa Fe Aggregates projects would provide raw materials to meet the demand for local and regional construction projects. The operations of these projects would respond to local demand, not cause demand to increase. These projects would not result in other areas being converted to non-agricultural land use. The Sanger Crossing Apartment, Pitman farms, and Family Dollar Store projects are located in the urban area of

Sanger and would not result in the conversion of agricultural lands. None of the projects would involve the conversion of forest land. Therefore, the Project-related (Section 3.2.6.4) and cumulative impacts would not be expected to induce the conversion of agricultural or forest lands to other uses and are considered less than significant, and the Project would not make a cumulatively considerable contribution to these effects.

Air Quality

Would the Project, when considered in conjunction with other cumulative projects, violate any air quality standard or contribute substantially to an existing or projected air quality violation? (CEQA Guidelines Threshold Criteria (b))

This impact is assessed in Section 3.3.6.2. Short term concentrations of NO_x, SO_x, PM₁₀ and PM_{2.5} each exceed the applicable threshold when added to background or compared to the SIL (see Table 3.3-16). Thus, Project impact on short term concentrations of these pollutants is cumulatively considerable.

Long term concentrations of PM₁₀ and PM_{2.5} each exceed the applicable threshold when added to background or compared to the SIL (see Table 3.3-16). Thus, Project impacts on long term concentrations of these pollutants is cumulatively considerable.

It is unlikely that emissions from the nearby projects would combine with Project emissions and result in a localized hot spot. Therefore, pollutant concentrations that do not rise to a level of significance when added to background or compared to the SIL would not be expected to be cumulatively considerable. The NO_x tons per year threshold is the amount that is cumulatively considerable. It is exceeded and therefore the Project impact on regional ozone is both significant and cumulatively considerable. ROG and PM₁₀ regional impacts are each less than cumulatively considerable.

Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (CEQA Guidelines Threshold Criteria (c))

This impact is assessed in Section 3.3.6.3. The NO_x tons per year threshold is the amount that is cumulatively considerable. It is exceeded and therefore the Project impact on regional ozone is both significant and cumulatively considerable. ROG and PM₁₀ regional impacts are each less than cumulatively considerable.

Would the Project, when considered in conjunction with other cumulative projects, expose sensitive receptors to substantial pollutant concentrations? (CEQA Guidelines Threshold Criteria (d))

Two (Carmelita and Sanger-Centerville) of the mining projects are near the Project and two (Santa Fe Aggregates and Kings River Sand and Gravel) are adjacent to the Project. However, the acreage over

which mining occurs (i.e. processing areas are greater than a mile from each other) and the mining methods used are such that it is unlikely that plumes would come together to create a hot spot. Since exposure of sensitive receptors to substantial pollutant concentration is a localized assessment and not regional in nature, a cumulative impact is unlikely.

In addition, the health risk assessment thresholds that determine the Project impact already represent thresholds which are cumulatively considerable. The impact analysis in Section 3.3.6.6 shows that the Project would not result in significant impacts to sensitive populations, and those impacts are less than cumulatively considerable.

Therefore, the effect of the Project and the cumulative projects are not considered to be a significant cumulative impact of pollutants to sensitive receptors.

Would the Project, when considered in conjunction with other cumulative projects, create objectionable odors affecting a substantial number of people? (CEQA Guidelines Threshold Criteria (e))

As discussed in Section 3.3.6.5, the Project is unlikely to emit odors affecting a substantial number of people, and the project odor impact is less than significant. However, the nearest receptor is within one-mile from the asphalt plant. Therefore, the Project impact is considered less than cumulatively considerable.

Biological Resources

Would the Project, when considered in conjunction with other cumulative projects, have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (CEQA Guidelines Threshold Criteria (b))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. As part of the evaluation process, the applicants were required to analyze their projects' impacts and conduct field surveys to evaluate sensitive habitat potential. It was found that cumulative effects on biological resources would not be expected due to the previously disturbed nature of the sites (e.g., agriculture and grazing) of all of these projects. In addition, the reclamation activities for these projects will either return much of the area to habitat or, in some cases, result in an increase of habitat over baseline conditions. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan, and were determined to have a less than significant impact.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. However, these projects are not located adjacent to the Kings River and would be too distant to have a significant cumulative effect on biological resources.

As discussed in Section 3.4.6.2, the Project would not remove any riparian or sensitive habitat and a minimum of a 50-foot setback would be established from the edge of the riparian community. This is considered a beneficial impact since it increases the distance between the riparian habitat and the current land use (agriculture) by more than 40 feet. Therefore, the Project's contribution to potential cumulative impacts would not be considerable, and there would be no significant cumulative impacts to riparian and sensitive communities.

Would the Project, when considered in conjunction with other cumulative projects, have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filing, hydrological interruption, or any other means? (CEQA Guidelines Threshold Criteria (c))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. As part of the evaluation process, the applicants were required to analyze their projects' potential impacts to federally protected wetlands as defined by Section 404 of the CWA. The only identified project that is anticipated to have any impact on federally protected wetlands is the Sanger-Centerville project. Impacts for that project were determined to be less than significant with mitigation. Therefore, it is considered that the overall significant cumulative impact would be less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store are in the entitlement process and still being evaluated. However, these projects are not located adjacent to the Kings River and would be too distant to contribute to a significant cumulative effect on biological resources.

As discussed in Section 3.4.6.3, the only potential Waters of the U.S./State within the Project site are the underground pipeline portion of the Hanke Ditch. The only impact to this feature would be to replace the underground piped section with an open ditch section. Thus, to the extent that there are any impacts to the Hanke Ditch, they would be beneficial. Therefore, the Project's contribution to cumulative impacts to wetlands is considered to be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance? (CEQA Guidelines Threshold Criteria (e))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase, and it was determined that these projects would not conflict or interfere with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance. Therefore, the overall cumulative impact would be less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are still being evaluated. However, these projects are not located adjacent to the Kings River and would be too distant to contribute to a significant cumulative effect on biological resources.

As discussed in Section 3.4.6.5, the Project would be consistent with all local policies and ordinances protecting biological resources. Thus the Project would not have a cumulatively considerable impact on conflicts with local policies or ordinances protecting biological resources, and this impact is considered less than significant.

Would the Project, when considered in conjunction with other cumulative projects, have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (CEQA Guidelines Threshold Criteria (a))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement process. As part of the evaluation process, the applicants were required to analyze their projects' impacts and/or conduct surveys for listed or candidate species and potential habitat. Impacts to biological resources would not be expected due to the previously disturbed nature (e.g., agriculture and grazing) of these identified projects. In addition, the reclamation activities for these projects will either return much of the area to habitat and in some cases result in an increase of habitat over baseline conditions. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan, and were determined to have a less than significant impact to special status species.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store are in the entitlement process and still being evaluated. However, these projects are not located adjacent to the Kings River and are too distant to contribute to a significant impact to the biological resources impacted by the Project.

As discussed in Section 3.4.6.6, there are eight special-status species that could occur in the BSA. Project impacts to these species were discussed in detail in Section 3.4, and it was determined that the Project's impacts would either be less than significant or less than significant with the incorporation of mitigation measures. Therefore, the Project's contribution to cumulative impacts to candidate, sensitive, or special status species is considered to be less than significant.

Cultural and Paleontological Resources

Would the Project, when considered in conjunction with other cumulative projects:

- ***Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? (CEQA Guidelines Threshold Criteria (a))***
- ***Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (CEQA Guidelines Threshold Criteria (b))***

- ***Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (CEQA Guidelines Threshold Criteria (c))***
- ***Disturb any human remains, including those interred outside of formal cemeteries? (CEQA Guidelines Threshold Criteria (d))***

Impacts to cultural and paleontological resources are site-specific, yet the destruction and/or loss of such resources could be cumulatively significant if not collectively addressed by individual projects. All the cumulative projects are required to comply with the same local, State, and Federal regulations as the Project. The County General Plan includes policies requiring the identification and mitigation of cultural and paleontological resources on a project-by-project basis as a means of protecting those resources countywide. Therefore overall cumulative impacts associated with cultural and paleontological resources are considered less than significant.

As discussed in Section 3.5.6, the Project design features, BMPs and mitigation measures would prevent impacts to cultural and paleontological resources from becoming significant at the project level. Therefore, the Project's contribution would also be cumulatively less than considerable. No additional mitigation measures are necessary.

For these reasons, the Project would not contribute to cumulatively significant impacts related to cultural and paleontological resources.

Geology and Soils

Would the Project, when considered in conjunction with other cumulative projects, expose people or structures to potential substantial adverse effects, involving the risk of loss, injury, or death involving:

- ***Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map issued by the State Geologist for the area or based on other substantial evidence of known fault;***
- ***Strong seismic ground shaking;***
- ***Seismic-related ground failure, including liquefaction; or***
- ***Landslides? (CEQA Guidelines Threshold Criteria (a))***

All the cumulative projects are or will be required to be in compliance with the UBC/CBC and the County General Plan. Therefore the projects are not likely to expose people or structures to potential substantial adverse effects involving risk of loss, injury or death associated the seismic and/or landslide hazards listed above. Overall cumulative impacts associated with these effects are less than significant.

As discussed in Section 3.6.6.2, the Project site is not located within a currently designated Alquist Priolo Fault Zone. In addition to ground shaking, effects of seismic activity may include surface fault rupture,

soil liquefaction, seismically induced differential settlement, ground lurching, lateral spreading, and earthquake-induced flooding. Other geologic hazards include seiches and tsunamis. As described in Section 3.6.6.2, none of these geologic hazards are considered likely to occur at the Project site. As a result, the Project would not make a cumulatively considerable contribution and the potential cumulative impact of these potential geologic hazards is considered less than significant.

Would the Project, when considered in conjunction with other cumulative projects, result in substantial soil erosion or the loss of topsoil. (CEQA Guidelines Threshold Criteria (b))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. They will be required to comply with SMARA requirements for slope stability and soil erosion as well as their site specific SWPPP. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. However, these projects are located in or near the City of Sanger, and it is not anticipated that these projects would have a significant soil erosion or loss of topsoil cumulative effect. It is also assumed that, if they are approved, the projects will be considered consistent with applicable requirements and the County General Plan.

As discussed in Section 3.6.6.3, the Project site is currently relatively flat and future excavation will be conducted in accordance with SMARA requirements. Slope stability analysis was conducted to determine if the slopes would remain stable during static conditions and seismic events. Compliance with the SWPPP would also provide for additional erosion control. Top soil would be stored on the Project site for future use in accordance with the approved Surface Mining and Reclamation Plan. The Project would not result in a significant impact and is considered consistent with the County General Plan. Therefore, the Project would not make a cumulatively considerable contribution to this impact and the Project's cumulative impact is considered to be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (CEQA Guidelines Threshold Criteria (c))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. These projects are not considered likely to expose people or structures to potential effects because they are located on a geologic unit or soil that is

unstable or would become unstable as a result of the project. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. It is assumed that, if they are approved, the projects will be considered consistent with applicable requirements and the County General Plan and that these projects would not be built on a geologic unit or soil that is unstable or become unstable as a result of the project. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.6.6.4, the Project site is currently relatively flat and future excavation will be conducted in accordance with SMARA requirements. Slope stability analysis was conducted to determine if the slopes would remain stable during static conditions and seismic events. The calculated factors of safety indicated that the proposed slopes would be suitably stable against gross failure for the anticipated long term conditions. The Project would not result in a significant impact and is considered consistent with the County General Plan. Therefore, the Project would not make a cumulatively considerable contribution to this impact and the Project's cumulative impact is considered to be less than significant.

Does the Project, when considered in conjunction with other cumulative projects, have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? (CEQA Guidelines Threshold Criteria (e))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. It was determined that these projects can support septic systems as necessary, or will be developed in an area capable of connecting to sewers for the disposal of waste waters. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. It is assumed that these projects will be consistent with applicable requirements and the County General Plan and that the projects will be capable of supporting septic systems as necessary, or will be connected to sewers for the disposal of waste waters. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.6.6.5, the Project would require the acquisition of a permit for the proposed septic system. Therefore, the Project would not make a cumulatively considerable contribution to this impact and the Project's cumulative impact is considered to be less than significant.

Greenhouse Gases/Climate Change

Would the Project, when considered in conjunction with other cumulative projects, generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? (CEQA Guidelines Threshold a)

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel and Santa Fe Aggregates projects have completed the entitlement phase and appropriate approvals have been received from the County. It was also determined that these projects would not conflict with applicable climate change plans. The Sanger Crossing Apartment, Pitman farms, and Family Dollar Store projects are still in the entitlement process and being evaluated.

The SJVAPCD has developed a project-level GHG impact assessment methodology based upon consistency with reductions adopted in the AB 32 Scoping Plan. The Scoping Plan contains GHG emissions reduction measures affecting sources at industrial, commercial, and residential developments. As discussed in Section 3.7.3.3, 16% reduction from Business as Usual in Year 2020 is the current threshold of significance for projects of all types within SJVAPCD and used in this DEIR.

The threshold of significance is based upon the Scoping Plan which considers existing and future sources. No Cumulative Project from Table 3-1 is listed in the AB 32 Scoping Plan or any other climate change plan. Nevertheless, each project would be doing its fair share to reduce the cumulative effect on climate change if it is able to show consistency with the AB 32 Scoping Plan.

As discussed in Section 3.7.6.3, the Project emissions would be consistent with the AB 32 Scoping Plan. Consistency with the Scoping Plan is equivalent to a less than cumulatively considerable impact as discussed by SJVAPCD.

“Projects exempt from the requirements of CEQA, and projects complying with an approved GHG emission reduction plan or mitigation program would also be determined to have a less than significant individual or cumulative impact.... Projects not implementing BPS [Best Performance Standards] would require quantification of project specific GHG emissions. To be determined to have a less than significant individual and cumulative Impact on global climate changes, such projects must be determined to have reduced or mitigated GHG emissions by 29%, consistent with GHG emission reduction targets established in ARB’s AB 32 Scoping Plan.” (SJVAPCD, 2009).

The 29% value was reduced to 16% by updated assumptions and baseline in the Functional Equivalent Document (CARB, 2011). The Scoping Plan is an approved GHG emissions reduction plan and SJVAPCD has determined that consistency with the Scoping Plan percent reduction from 2020 BAU would result in less than significant individual and cumulative impact. Project GHG reductions from 2020 BAU exceed the 16% reduction prescribed by the Scoping Plan and Functional Equivalent Document. Therefore, the Project is not cumulatively considerable and the impact is less than significant.

Would the Project, when considered in conjunction with other cumulative projects, conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs? (CEQA Guidelines Threshold b))

As discussed directly above and in Section 3.7.6.3, the Project emissions would be consistent with the AB 32 Scoping Plan. Therefore, the Project is not cumulatively considerable and the impact is less than significant.

Hazards and Hazardous Materials

Would the Project, when considered in conjunction with other cumulative projects, create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (CEQA Guidelines Threshold Criteria (a))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. They will be required to comply with numerous local, State and Federal regulations relating to the routine transport, use and disposal of hazardous materials. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. It is also assumed that, if they are approved, these projects will comply with hazardous materials regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.8.6.2, the Project would not involve large quantities of hazardous materials, it has incorporated numerous environmental protection measures and design features to minimize potential impacts associated with the transport, use or disposal of hazardous materials, and it will comply with all applicable regulatory requirements. The Project would not result in significant impacts related to these effects. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with the transport, use or disposal of hazardous materials would be less than significant.

As discussed in Section 3.8.6.2, preventative practices would be implemented to control mosquitos. Therefore, the potential for the Project to create mosquito development habitat would be limited and this potential impact is considered less than significant. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with the control of mosquitos would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials? (CEQA Guidelines Threshold Criteria (b))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. They will be required to comply with numerous local, State and Federal regulations relating to the safe management of hazardous materials, pollution prevention, and spill and emergency response and preparedness. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. It is also assumed that, if they are approved, these projects will comply with hazardous materials regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.8.6.3, the Project would not involve large quantities of hazardous materials, and employee training would be conducted on the safe management of hazardous material and spill/emergency response requirements. The Project has incorporated numerous environmental protection measures and design features to minimize potential spills, upsets, or accidents associated with hazardous materials, and it will comply with all applicable regulatory requirements. The Project would not result in significant impacts related to these effects. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with these effects would be less than significant.

For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project, when considered in conjunction with other cumulative projects, result in a safety hazard for people residing or working in the project area? (CEQA Guidelines Threshold Criteria (e))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. Carmelita is the closest project to an airport, located within 5,000 feet of the Reedley Municipal airport, and there was a concern that there could be an increased risk of bird aircraft strikes. It was concluded that the Carmelita project would not have a significant impact associated with BASH. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. It is also assumed that, if they are approved, these projects will comply

with all regulations regarding airport safety, and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.8.6.4, the Project is approximately 3 miles away from the Reedley airport, is not included in an airport use plan, and would not increase the risk of bird aircraft strikes. The Project would not result in significant impacts related to these effects. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with these effects would be less than significant.

Hydrology and Water Quality

Would the Project, when considered in conjunction with other cumulative projects, violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater water quality? (CEQA Guidelines Thresholds (a) and (f))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. They would be required to comply with numerous local, State and Federal regulations relating to water quality and waste discharge requirements. These could include but are not limited to: NPDES, SWPPP, Hazardous Materials Business Plan, Section 404 Permits, Section 1600 Stream Alteration Agreements, Stormwater Permit, Sewer and Septic System Permits. Therefore, overall cumulative impacts associated with water quality and waste discharge are considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. It is also assumed that, if they are approved, the projects would comply with water quality and waste discharge regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.2, the Project would include numerous design features and BMPs to protect water quality. There would be a site specific Hazardous Materials Business Plan, SWPPP and, if necessary, SPCC Plan. The employees would be trained in hazardous materials management and spill and emergency response procedures. The Project would comply with all applicable local, State and Federal requirements and regulations and obtain the necessary permits. Therefore the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with water quality and waste discharge would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the

production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (CEQA Guidelines Threshold (b))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. The net amount of water required for the Carmelita mining project would be substantially less than the net amount of water that is currently being used for the orchards that occupy the Carmelita site. The Sanger -Centerville Operations Expansion proposed to use deep well water, eliminate its diversion and use of Kings River water, and cease pit dewatering. The project wells would only be drawing deep water below the confining clay bed and there would be no significant drawdown resulting from the project pumping in the shallow water supply wells mainly used for agriculture in the vicinity. The Kings River Sand and Gravel project was approved as proposed to reduce permitted quarry operations. It is similar to the Sanger-Centerville project in that excavation would create two groundwater lakes. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger and would therefore most likely be supplied with groundwater from city wells. The City intends to have a balanced long-term water supply through practicing recharge activities (KDSA, 2014). Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.3, components of the Project potentially affecting groundwater supplies are the mining related consumptive water use, and increased evaporative losses of exposed groundwater due to creation of numerous open water ponds. Surface water has been and would continue to be used for irrigation of agricultural lands at the Project site. Groundwater would be exclusively used to supply Project related mining needs.

As stated above, the aquifer in the Project site vicinity is recharged from local surface water bodies. A decrease in the use of surface water at the Project site and an increase in evaporation from the reclaimed ponds could lower groundwater levels. However, lower groundwater levels would allow more water to seep out of the river and thus will counterbalance any groundwater decline. Since less water would be diverted from the Kings River for irrigation at the Project site, there would be no net loss of water from the Kings River. Thus, the Project's increase in water consumption is considered minor compared to the baseline consumption, and to the available storage in the Subbasin. Any potential decrease in groundwater levels would be less than 5 feet (KDSA, 2014). Therefore, the increase in water consumption would not significantly affect groundwater levels in the vicinity or existing off-site wells. The effect of backfill on groundwater flow is minor, and groundwater would still proceed through the "window," as discussed in Section 3.9.6.3. Quarterly groundwater monitoring would be required to verify that groundwater levels are not substantially affected by the Project. Therefore, the Project would

not make a cumulatively considerable contribution, and the Project's cumulative impact associated with groundwater supplies and groundwater recharge would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? (CEQA Guidelines Threshold (c))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. The on- or off-site drainage and erosion characteristics of the cumulative projects are site specific. None of the cumulative sites alter the course of a river or a significant creek. Alternations to other drainage patterns are subject to procedures to review and approve stream alterations through both State (Section 1600 Stream Alteration Agreement) and Federal (Section 404) permit processes. This includes impacts associated with on- and off-site erosion and siltation. The process is designed to prevent cumulative erosion/siltation impacts to drainage systems. The projects would have SWPPPs and comply with the State General Permit for Stormwater. Given the mitigation measures required of the cumulative projects (which include minimum setbacks from, restrictions on drainage to, and separation of ponds from, the Kings River and Byrd Slough) and the relevant regulations, the cumulative impacts associated with the area projects to drainage patterns as it relates to erosion or siltation would be less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger and would not alter the course of a stream or river. It is also assumed that, if they are approved, the projects would comply with applicable regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.4, the Project does not involve alteration of the existing water bodies, and the ponds would contain their own runoff. No natural surface water courses traverse the Project site. Numerous erosion and sediment controls would be implemented as part of the Project, including the BMPs identified in the site specific SWPPP. The Project would comply with applicable regulatory requirements. Therefore the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with the existing drainage pattern as it relates to erosion or siltation would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (CEQA Guidelines Threshold (d))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. The on/or off-site drainage characteristics of the cumulative projects are site specific. The projects would have site specific SWPPPs and comply with the State General Permit for Stormwater. Given the mitigation measures required of the cumulative projects (which include minimum setbacks from, restrictions on drainage to, and separation of ponds from, the Kings River and Byrd Slough) and the relevant regulations, the cumulative impacts associated with surface runoff as it relates to flooding on- or off-site would be less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger and would not significantly alter the drainage pattern or the area or alter the course of a stream in a manner that would result in flooding. It is assumed that, if they are approved, the projects would comply with applicable regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.5, the Project would not change rates or volumes of surface water to the Kings River or other drainages. No significant surface water features traverse the Project site, and post reclamation grading of backfilled areas would maintain the relatively flat surfaces. Completed mine pits reclaimed as open water ponds would essentially be self-contained. Precipitation falling within these areas would be contained within the ponds and discharges would not occur. Runoff would be managed as described in Section 3.9.6.5. Therefore the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with the existing drainage pattern and surface runoff as it relates to flooding on or off-site would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, cause flooding on- and off-site, or provide substantial additional sources of polluted runoff? (CEQA Guidelines Threshold (e))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. The development of the cumulative projects would result in an increase in impervious surfaces and increase run-off from the sites. The sites are in rural areas that generally do not have stormwater drains. In addition, pollutants associated with parking lots, roads and landscaping combine with stormwater that could ultimately end up in the Kings River. However, the projects would be required to comply with applicable regulatory requirements including the BMPs identified in the site specific SWPPPs. Given the mitigation measures required of the cumulative projects (which include minimum setbacks from, restrictions on drainage to, and separation of ponds from, the Kings River and Byrd Slough) and the relevant regulations, the cumulative impacts

associated with surface runoff as it relates to existing or planned stormwater drainage systems, flooding on- or off-site and additional sources of polluted runoff would be less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger and would most likely be located near a stormwater drain. It is assumed that if they are approved the projects would comply with their site SWPPPs, applicable regulations and be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.6, the Project would obtain coverage under the General Permit for Discharges of Storm Water Associated with Industrial Activities (Permit Order 97-03-DWQ). All of the Project site operational areas would be covered by the Permit, including the mining area, haul roads, and plant area. Agricultural portions of the Project site would be subject to the Irrigated Lands Regulatory Program overseen by the RWQCB. The SWPPP would contain BMPs associated with potential discharge areas, hazardous materials, and sediment and erosion control measures. Monitoring and inspections required by the permit would be conducted to determine if changes to the erosion and sediment controls are warranted. Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with the existing drainage pattern and surface runoff as it relates to flooding on- or off-site would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, place within a 100-year flood hazard area structures which would impede or redirect flood flows? (CEQA Guidelines Threshold (h))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. The projects have been individually reviewed to ensure that no habitable structures are located within the 100-year flood hazard area. To the extent that the projects are located in the 100-year flood plains, conditions of approval require the installation of flood control measures to remove structures from the flood plain. Therefore, the overall cumulative impact is considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger. It is assumed that, if they are approved, the projects would comply with standard conditions of approval, require the installation of flood control measures, if applicable, and that they would be consistent with the County General Plan. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.7, the Project would not affect the banks, channel, or capacity of the Kings River and would not involve construction of dikes or other structural flood control features. There would be a minimum of a 50-foot setback from the regulated and designated floodways. The phases to be reclaimed to farmland would be filled back to the original grade resulting in no change to the floodplain. The phases reclaimed back to ponds would actually increase the flood-holding capacity in those phases because the water surface in the ponds would be 15'-20' below the original grade of the land. Therefore the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with placing structures within the 100-year flood hazard area that could impede or redirect flood flow would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (CEQA Guidelines Threshold (i))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. It was concluded that these projects would not include the placement of structures, or expose people to significant risk associated with the failure of a levee or dam. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. These projects are located in or near the City of Sanger. It is assumed that, if they are approved, the projects would be consistent with the County General Plan and would not include the placement of structures, or expose people to significant risk associated with the failure of a levee or dam. Therefore, overall cumulative impacts associated with these effects are considered less than significant.

As discussed in Section 3.9.6.8, the Project mining areas would be set back at least 50 feet from the Kings River designated and regulated floodways. However, the Hydraulic Flood Analysis (Chang, January 2014) indicates that portions of the plant site are within the floodplain fringe. Exceptionally high Kings River flows associated with heavy precipitation and/or meltwater could potentially result in flooding, which could potentially expose employees or structures to significant risk of loss or injury. With the implementation of the identified mitigation measures HWQ-1 and HWQ-2, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with loss or injury involving flooding would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, cause inundation by seiche, tsunami, or mudflow? (CEQA Guidelines Threshold (j))

None of the cumulative projects nor the Project would be located in an area that would be subject to a seiche or tsunami. The approved slopes within the mining projects and the materials present in those areas are not conducive to the formation of mudflows (Section 3.9.6.9). Therefore, the Project would not make a cumulatively considerable contribution, and the Project's cumulative impact associated with seiche, tsunami or mudflows would be less than significant.

Land Use and Planning

Would the Project, when viewed in conjunction with other cumulative projects, conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (CEQA Guidelines Threshold Criteria (b))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase. These projects have been evaluated in conjunction with their respective approval requirements and for consistency with the County General Plan and were determined to have a less than significant impact. Therefore, overall cumulative impacts associated with land use are considered less than significant.

The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. It is also assumed that, if they are approved, these projects will be considered consistent with the County General Plan. Therefore, overall cumulative impacts associated with land use are considered less than significant.

It is anticipated that county-wide growth has been or will be reviewed for consistency with the County's General Plan, Kings River Regional Plan and zoning ordinances. These regulations require findings of plan and policy consistency prior to approval of entitlements of developments. Because these plans, policies and zoning ordinances take into consideration county-wide growth, consistency with these requirements demonstrate that the Project would not make a cumulatively considerable contribution to this impact, and the Project's cumulative impact to land use and planning is considered to be less than significant (Section 3.10.6.2).

Noise

Would the Project result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (CEQA Guidelines, (a))

The Carmelita, Sanger-Centerville, Kings River Sand and Gravel, and Santa Fe Aggregates projects have completed the entitlement phase and two of these projects (Sanger-Centerville and Santa Fe

Aggregates) were in operation when ambient noise measurements were taken and are therefore incorporated into the analysis.

Carmelita's processing area is approximately 2.7 miles from the Riverbend processing area. There are receptors located between the two projects, but the maximum exposed receiver, which would be located approximately half way between Carmelita and Riverbend, would still be over a one mile distance from each processing area. The Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are in the entitlement process and still being evaluated. These projects would only be considered noise sources during construction and are greater than 1.7 miles from the Project. Therefore, the noise from Carmelita and the Sanger Crossing Apartments, Pitman Farms and Family Dollar Store projects are not expected to be cumulatively considerable.

As discussed in Section 3.11.6.2, the Kings River Sand and Gravel project is located to the southeast adjacent to the Riverbend project. Receiver 13 is located between the two plant areas approximately 0.6 miles from the Riverbend plant area and 0.8 miles from the Kings River Sand and Gravel plant area. Predicted noise from Riverbend at Receiver 13 is less than the applicable thresholds. Predicted noise from Kings River Sand and Gravel at Receiver 13 is also less than the applicable thresholds. As a result, it is unlikely that the cumulative contribution of noise would be appreciably different from the noise generated by each aggregate producer operating independently.

Therefore, the Project noise impact is less than cumulatively considerable.

Would the Project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Project? (CEQA Guidelines, (c))

As discussed in Section 3.11.6.3, the Project would not cause a permanent increase in noise levels exceeding the FICON threshold at any of the receivers near the Project. However, Project traffic would cause noise levels along roadways to exceed the FICON threshold resulting in a significant noise impact. Thus, the Project, together with the noise from the Kings River Sand and Gravel project traffic and the Carmelita project, would also have a cumulatively considerable noise impact due to the permanent increase in noise at roadside receivers.

Would the Project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (CEQA Guidelines (d))

As discussed in Section 3.11.6.4, the Project would not cause a substantial temporary or periodic increase in noise levels because increases in noise are considered permanent. Thus, the Project would have a less than cumulatively considerable temporary or periodic noise impact.

Transportation and Traffic

Would the Project, when considered in conjunction with other cumulative projects, conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? (CEQA Guidelines Threshold Criteria (a))

Regionally, all proposed projects are assessed for potential impacts due to increased traffic volumes, or impacting capacities of the street system on an individual basis. Roadway capacities and traffic loading are analyzed as part of each project's traffic impact analysis. If project impacts are projected to occur, the project proponent is required to mitigate the impact to a level of less than significant either through direct project construction or fair share contribution. Each of the cumulative projects identified on Table 3-1 has been evaluated or will be evaluated for their potential impacts to transportation and traffic on a localized and regional level. The individual project approval processes have identified or will identify both project related and cumulative traffic impacts that would be mitigated through project related construction and fair share contribution toward mitigation of regional impacts. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the potential cumulative traffic impacts remain significant and unavoidable.

Carmelita, Sanger-Centerville and Kings River Sand and Gravel were specifically evaluated in the TIS. Trip generation and distribution information for the approved/pending projects was based on information found in their corresponding TIS reports. Trip generation and distribution information are discussed in Section 3.12.6.2 and provided in the TIS (Appendix K of this DEIR).

The cumulative impacts of the Project were also analyzed considering future traffic conditions, approximately twenty years after the assumed opening day of the Project, or in this case the year 2035. The levels of traffic expected in 2035 relates to the cumulative effect of traffic increases resulting from the implementation of the General Plans of local agencies, including the City of Fresno and Fresno County. Traffic conditions without the Project in the Year 2035 were estimated using the Fresno COG regional travel model. Future traffic forecasts along study area roadway segments were estimated by utilizing methodologies published by Fresno COG using the TurnsW32 program. This process is summarized in Section 3.12.6.

Santa Fe Aggregates, Sanger Crossing Apartment, Pitman Farms and Family Dollar Store) have either completed or are currently being evaluated in the manner discussed above.

The Project would not contribute to or impact mass transit and non-motorized travel components of the regions circulation system. However, as discussed in Section 3.12.6.2, the Project would contribute to growth in regional traffic. This growth is generally consistent with regional growth projections identified within the County General Plan. Planned roadway improvements and those for which the Project would be required to contribute a proportional fair share funding as specified in the identified mitigation measures would ensure cumulative traffic increases do not exceed the roadway system capabilities.

Although implementation of the required traffic mitigation measures would reduce future cumulative traffic impacts to less than significant, it is not known with certainty when these improvements will actually be implemented. As a result, the potential cumulative traffic impacts remain significant and unavoidable.

Would the Project, when considered in conjunction with other cumulative projects, conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? (CEQA Guidelines Threshold Criteria (b))

Regionally, all proposed projects are assessed for potential impacts due to increased traffic volumes, or impacting capacities of the street system on an individual basis. Roadway capacities and traffic loading are analyzed as part of each project's traffic impact analysis. If project impacts are projected to occur, the project proponent is required to mitigate the impact to a level of less than significant either through direct project construction or fair share contribution. If the projected impact will occur outside the lead agency's jurisdiction, the project proponent is required to contribute its fair share cost to redesigning and constructing any necessary improvements. Each of the cumulative projects identified on Table 3-1 has been evaluated or will be evaluated for their potential impacts to transportation and traffic on a localized and regional level. The individual project approval processes have identified both project related and cumulative traffic impacts that would be mitigated through project related construction and fair share contribution toward mitigation of regional impacts. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the potential cumulative traffic impacts remain significant and unavoidable.

On a Project level, Section 3.12.6.2, discusses the potential short term and long term impacts on identified roadway intersections and roadway segments. These roadway intersections and segments were analyzed for both general traffic-related growth occurring and directly attributable to the Project traffic. Planned roadway improvements and those for which the Project would be required to contribute proportional share funding as specified in the mitigation measures defined in Section 3.12.6. would ensure cumulative traffic increases do not exceed specified roadway system capacities. Although implementation of the required traffic mitigation measures would reduce future cumulative traffic impacts to less than significant, it is not known with certainty when these improvements will actually be implemented. As a result, the potential cumulative traffic impacts remain significant and unavoidable.

Would the Project, when considered in conjunction with other cumulative projects, result in any changes in air traffic patterns or present a substantial safety risk? (CEQA Guidelines Threshold Criteria (c))

Regionally, none of the cumulative projects identified on Table 3-1 have been determined to or are anticipated to increase air-related traffic levels. These projects have been or will be evaluated in conjunction with their respective approval requirements, including FAA standards and for consistency with the General Plan. Thus the overall cumulative impact would be less than significant.

As discussed in Section 3.12.6.3, on a project level, the facility and equipment heights would not intrude or obstruct navigable airspace or result in a change in location that would result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Therefore, the Project would not make a cumulatively considerable contribution to this impact, and the Project cumulative impact to air traffic patterns would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (CEQA Guidelines Threshold Criteria (d))

Regionally, the projects identified on Table 3-1 have been or will be evaluated in conjunction with their respective approval requirements, including TI standards and for consistency with the General Plan. Adherence to the General Plan requirements and conditions of approval for the cumulative projects ensures that these projects do not create a cumulative impact. Therefore, overall cumulative impacts would be less than significant.

As discussed in Section 3.12.6.4, on a project level, the Project design and implementation of the site access mitigation measure (MMTrans-2) would alleviate potential traffic hazards. The Project would not introduce a design feature such as sharp curves or dangerous intersections. With implementation of the identified mitigation measures, the Project would not make a cumulatively considerable contribution to this impact, and the Project's cumulative traffic hazard impact would be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, result in inadequate emergency access? (CEQA Guidelines Threshold Criteria (e))

Regionally, County's emergency response agencies (police and fire departments) typically review project designs to ensure adequate emergency access is available. The approval process for the cumulative projects identified in Table 3-1 would require adherence to the respective emergency response agency's requirements. Therefore, the overall cumulative impacts are considered less than significant.

As discussed in Section 3.12.6.5, the Project is located in a rural area away from other major residential, commercial or industrial establishments which would interfere with emergency vehicles. The Project is in the vicinity of SR 180, a major roadway, and the Project site access road would be paved. These features or conditions would be adequate in providing emergency access to the facility. Furthermore, the facility would not interfere with emergency vehicles responding to other locations in the region and therefore cumulative emergency access impacts are determined to be less than significant.

Would the Project, when considered in conjunction with other cumulative projects, conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? (CEQA Guidelines Threshold Criteria (f))

Regionally, the Cities of Reedley and Sanger along with the County's General Plan contain adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities. It is assumed that approval of the cumulative projects identified in Table 3-1 ensures adherence to these requirements. Therefore the projects do not create a cumulative significant impact and overall cumulative impacts would be less than significant.

As discussed in Section 3.12.6.6, on a project level, the Project would not conflict with adopted policies, plans or programs supporting alternative transportation. Thus, the Project would not make a cumulatively considerable contribution to this impact, and the Project's cumulative impact to public transit, bike, and pedestrian plans would be less than significant.

Would truck traffic generated by the Project, when considered in conjunction with other cumulative projects, result in the TI increasing by a factor of 0.5? (Fresno County Guidelines)

Regionally, all proposed projects are assessed for potential impacts to the structural condition of the roadway due to increased traffic volumes. If truck traffic generated by a project results in the TI increasing by a factor of 0.5, it is considered potentially significant. The project would be required to mitigate the roadway structural section to accommodate the increase in truck traffic to a level of less than significant either through direct project construction or fair share contribution. Each of the cumulative projects identified on Table 3-1 has been evaluated or will be evaluated for their potential impacts to the TI. The individual project approval processes have identified or will identify both project related and cumulative traffic impacts that would be mitigated through project related construction and fair share contribution toward mitigation of regional impacts. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the potential cumulative traffic impacts remain significant and unavoidable.

On a project level, as discussed in Section 3.12.6.7, the TI for several street segments will increase by a factor of 0.5 or greater with the addition of the proposed Project truck traffic. As a result, the Project will contribute its fair share cost for the purposes of improving the structural section of the impacted street segments. However, since it is unclear when these measures will be fully funded and therefore actually be implemented, the Project potential cumulative impacts remain significant and unavoidable.

5.2 Growth-Inducing Impacts

This section evaluates the potential for the Project to affect economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

There are two types of growth inducing impacts that a project may have: direct and indirect. To assess the potential for growth-inducing impacts, the Project's characteristics that may encourage and facilitate activities that individually or cumulatively affect the environment must be evaluated.

Direct growth inducing impacts occur when the development of a project imposes new burdens on a community by directly inducing population growth, or by leading to the construction of additional developments in the same area. Also included in this category are projects that remove physical obstacles to population growth, such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional development in the service area. Construction of these types of infrastructure projects cannot be considered isolated from the development they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth are those, which may provide a catalyst for future unrelated development in an area such as a new residential community that requires additional commercial uses to support residents.

As discussed in Section 2.0 of this document, the Project proposes the development of an aggregate surface mine on approximately 833 acres and related onsite processing plants consisting of aggregate processing, asphalt, concrete, and recycle plant. The Project would not involve the development of residential land uses. Instead, the development of the Project is in direct response to the region's growing population and building industry. In other words, growth will occur whether or not the Project is implemented. However, if local aggregate supplies are insufficient to meet the construction industry's demands, the aggregate would have to be brought in from sources outside the local area adding traffic and air quality impacts. Accordingly, the Project is not considered growth inducing, but rather growth dependent and will respond to the needs of the construction industry. Therefore, implementation of the Project would not induce growth not already envisioned by the County of Fresno.

5.3 Summary of Impacts Including Significant and Unavoidable Impacts

The following provides a summary of the Project impacts, including significant and unavoidable impacts. A DEIR must disclose the significant and unavoidable impacts that will result from implementation of a proposed project. Moreover, CEQA Guidelines Section 15126.2(b) states that a Draft EIR should explain the implications of such impacts and the reasons why the project is being proposed, notwithstanding such impacts. Implementation of the Project would result in the alteration of the physical environment.

No Impact or Less Than Significant Impact

The following topical environmental issue(s) had no impact or were below the level of significance and did not require mitigation.

Aesthetics CEQA Guidelines Thresholds:

- a) *Would the Project have a substantial adverse effect on a scenic vista? (No Impact)***
- b) *Would the Project substantially damage scenic resources, including but not limited to trees, rock outcroppings and historic buildings within a state scenic highway? (No Impact)***
- c) *Would the Project substantially degrade the existing visual character or quality of the site and its surroundings? (Impact AES-1)***

- d) Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area? (Impact AES-2)**

Agriculture and Forestry Resources CEQA Guideline Thresholds:

- b) Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract? (Impact AG-2)**
- c) Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? (No Impact)**
- d) Would the Project result in the loss of forest land or conversion of forest land to non-forest use? (No Impact)**
- e) Would the Project involve other changes in the existing environment, which due to their location or nature, could result in conversion of Farmland to non-agricultural use, or conversion of forest land to non-forest use? (Impact AG-3)**

Air Quality CEQA Guidelines Thresholds:

- a) Would the Project conflict with or obstruct implementation of an applicable air quality plan? (Impact AQ-1)**
- d) Would the Project expose sensitive receptors to substantial pollutant concentrations? (Impact AQ-4)**

Biological Resources CEQA Guidelines Thresholds:

- b) Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (Impact BIO-1)**
- c) Would the Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (Impact BIO-2)**
- d) Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (Impact BIO-3)**

- e) ***Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Impact BIO-4)***
- f) ***Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan? (No Impact)***

Cultural Resources CEQA Guidelines Thresholds:

- a) ***Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? (Impact CPR-1)***

Geology and Soils CEQA Guidelines Thresholds:

- a) ***Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:***
- ***Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map issued by the State Geologist for the area or based on other substantial evidence of known fault;***
 - ***Strong seismic ground shaking;***
 - ***Seismic-related ground failure, including liquefaction; or***
 - ***Landslides? (Impact GS-1)***
- b) ***Would the Project result in substantial soil erosion or the loss of topsoil? (Impact GS-2)***
- c) ***Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (Impact GS-3)***
- d) ***Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (No Impact)***
- e) ***Does the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? (Impact GS-4)***

Greenhouse Gases/Climate Change CEQA Guidelines Thresholds:

- a) ***Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Impact GHG-1)***

- b) Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Impact GHG-2)**

Hazards and Hazardous Materials CEQA Guidelines Thresholds:

- a) Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Impact HAZ-1)**
- b) Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Impact HAZ-2)**
- c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school? (No Impact)**
- d) Would the Project be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or environment? (No Impact)**
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area? (Impact HAZ-3)**
- f) For a project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area? (No Impact)**
- g) Would the Project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan? (No Impact)**
- h) Would the Project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (No Impact)**

Hydrology and Water Quality CEQA Guidelines Thresholds:

- a) Would the Project violate any water quality standards or waste discharge requirements? (Impact HWQ-1)**

- b) Would the Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (Impact HWQ-2)**
- c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? (Impact HWQ-3)**
- d) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (Impact HWQ-4)**
- e) Would the Project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, cause flooding on- and off-site, or provide substantial additional sources of polluted runoff? (Impact HWQ-5)**
- f) Would the Project otherwise substantially degrade water quality? (Impact HWQ-1)**
- g) Would the Project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (No Impact)**
- h) Would the Project place within a 100-year flood hazard area structures which would impede or redirect flood flows? (Impact HWQ-6)**
- i) Would the Project expose people or structures to impacts from inundation by seiche, tsunami, or mudflow? (Impact HWQ-8)**

Land Use and Planning CEQA Guidelines Thresholds:

- a) Would the Project physically divide an established community? (No Impact)**
- b) Would the Project conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (Impact LUP-1)**

- c) *Would the Project conflict with any applicable habitat conservation plan or natural community conservation plan? (No Impact)***

Noise and Vibration CEQA Guidelines Thresholds:

- b) *Would the Project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? (No Impact)*****d) *Would the Project cause a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project? (No Impact)***
- d) *Would the Project cause a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project? (Impact NO-3)***
- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels? (No Impact)***
- f) *For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the area to excessive noise levels? (No Impact)***

Transportation and Traffic CEQA Guidelines Thresholds:

- c) *Would the Project result in any changes in air traffic patterns or present a substantial safety risk? (Impact TRANS-3)***
- e) *Would the Project result in inadequate emergency access? (Impact TRANS-5)***
- f) *Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? (Impact TRANS-6)***

Less Than Significant Impact after Mitigation

After implementation of the Project, it has been determined that the following topical environmental issue(s) can be feasibly mitigated below the level of significance:

Agriculture and Forestry Resources CEQA Guideline Thresholds:

- a) *Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, Farmland of Local Importance, or Grazing Land as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use? (Impact AG-1)***

Air Quality CEQA Guidelines Thresholds:

- a) Would the Project create objectionable odors affecting a substantial number of people? (Impact AQ-5)**

Biological Resources CEQA Guidelines Thresholds:

- b) Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (Impact BIO-5)**

Cultural Resources CEQA Guidelines Thresholds:

- c) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Impact CPR-2)**
- d) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Impact CPR-3)**
- e) Would the Project disturb any human remains, including those interred outside of formal cemeteries? (Impact CPR-4)**

Hydrology and Water Quality CEQA Guidelines Thresholds:

- h) Would the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (Impact HWQ-7)**

Noise and Vibration CEQA Guidelines Thresholds:

- a) Would the Project result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Impact NO-1)**

Transportation and Traffic CEQA Guidelines Thresholds:

- g) Would the Project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (Impact TRANS-4)**

Significant and Unavoidable Impacts after Mitigation

The following topical environmental issue(s) remain significant and unavoidable after mitigation:

Air Quality CEQA Guidelines Thresholds:

- b) *Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation? (Impact AQ-3)***
- c) *Would the Project cause a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (Impact AQ-2)***

Noise and Vibration CEQA Guidelines Thresholds:

- e) *Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project? (Impact NO-2)***

Transportation and Traffic CEQA Guidelines Thresholds:

- a) *Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? (Impact TRANS-1)***
- b) *Would the Project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? (Impact TRANS-2)***

Fresno County Guidelines

Would truck traffic generated by the Project result in the Traffic Index (TI) increasing by a factor of 0.5? (Impact TRANS-7)

5.4 Significant Irreversible Environmental Changes

CEQA Guidelines Section 15126.2(c) requires discussion of significant irreversible environmental changes which would be caused by the Project should it be implemented, for example, when a project includes future commitments to non-renewable resources during construction or operation. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The environmental effects of the Project are discussed in Section 3, Environmental Impact Analysis, of this document. Implementation of the Project would require the long-term commitment of natural resources as described below.

Mineral Resources

The State of California classified the Project Site as MRZ-2 zone. MRZ-2 zones are areas where adequate information indicates that significant mineral deposits are present, or where it is judged that there is a high likelihood of their presence. Fresno County incorporated the MRZ-2 classification into the Mineral Resources Unit of the Open Space/Conservation Element of its General Plan. The State of California subsequently designated the Project site as having construction grade aggregate deposits that are of regional significance.

The Project is the development of an aggregate mine site in order to utilize this mineral resource, which is considered to be a non-renewable resource, to meet the needs of the Fresno region.

Other Irreversible Changes

Approval and implementation of the Project would result in an irretrievable commitment of other non-renewable resources such as energy supplies. Refer to Section 3.7.5 for a discussion related to electrical generation. The energy resource demands would be used for on-site mining activities, transportation of products and mineral resources, as well as other energy associated needs related to the on-site processing plants.

Non-renewable energy resources would be committed primarily in the form of fossil fuels, and would include diesel fuel, oil, natural gas, and gasoline used by vehicles and equipment associated with the operation of the Project.

Environmental changes associated with implementation of the Project would result in alterations of the physical environment. If the Project is approved, and subsequently implemented, new structures would be built, additional utilities would be constructed, and circulation improvements would be made.

The development of the Project is in direct response to the region's growing population and building industry. In other words, growth will occur whether or not the Project is implemented. Aggregate deposits will be mined to provide needed construction-grade aggregate and energy supplies will be used for mining activities, transportation of products and mineral resources, as well as other energy associated needs related to processing the material. The commitment of resources and the levels of consumption associated with the Project are consistent with these anticipated changes. Therefore, there is no particular justification for avoiding or delaying the continued commitment of these resources.

6.0 REPORT PREPARATION RESOURCES, ORGANIZATIONS & PERSONS CONSULTED

6.1 Draft EIR Preparation

Sespe Consulting, Inc.
468 Poli St., Suite 2E
Ventura, California 93001

6.2 Technical Sub-Consultants

Applied EarthWorks, Inc.	Cultural Resources Analysis
Bollard Acoustical Consultants, Inc.	Noise Impact Analysis
Buada Associates, John Stebbins, LSA Associates	Biological Resources
Chang Consultants	Surface Hydrology
DUDEK	Emission Inventory and Air Quality Impact Analysis
	Health Risk and Odor Assessment
Kenneth D. Schmidt and Associates	Water Supply Assessment
	Groundwater Assessment
RGP Planning and Development Services	Visual Impact Assessment
Sespe Consulting, Inc.	Greenhouse Gas Impact Analysis
Tetra Tech BAS GeoScience	Geotechnical and Geologic Hazards
VRPA Technologies, Inc.	Traffic Impact Analysis

6.3 Organizations and Persons Consulted

Buada Associates	John Buada, President
City of Sanger	David Duda, City Planner
County of Fresno, Development Services Division	Briza Sholars, Senior Planner
	Roy Jimenez, Jr., Planner
VRPA Technologies, Inc.	Jason Ellard, Transportation Engineer

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8.0 ACRONYMS

AADT	Annual Average Daily Traffic
AAQS	Ambient Air Quality Standards
AASHTO	American Association of State Highway and Transportation Officials
AC	Asphaltic Concrete
ACE	Agriculture Conservation Easement
ACM	Asbestos Containing Materials
AERMOD	American Meteorological Society/EPA Regulatory Model
AF	Acre-Foot
AOA	Air Operations Area
A-P Act	Alquist-Priolo Earthquake Fault Zoning Act
API	American Petroleum Institute
APSA	Aboveground Petroleum Storage Act
ARMR	Archaeological Resource Management Reports
AST	Aboveground Storage Tank
ATCM	Airborne Toxic Control Measure
BAC	Bollard Acoustical Consultants
BAU	Business-as-Usual
Bgs	Below Ground Surface
BLM	Bureau of Land Management
BMPs	Best Management Practices
BNSF	Burlington Northern/Santa Fe
BPS	Best Performance Standards
BRE	Biological Resources Evaluation
BSA	Biological Study Area
CA SA	California Special Animal
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
CAFÉ	Corporate Average Fuel Economy
CalARP	California Accidental Release Program
CalEMA	California Emergency Management Agency
CalEPA	California Environmental Protection Agency
CalTrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CCR	California Code of Regulations
CDFG	California Department of Fish & Game
CDFW	California Department of Fish & Wildlife
CDPH	California Department of Public Health
CEC	California Energy Commission

CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFC	Chlorofluorocarbon
CGS	California Geological Survey
CH ₄	Methane
CHRIS	California Historical Resources Information System's
CLUPP	Fresno County Airport Land Use Commission's Airport Land Use Policy Plans
CMI	Calaveras Materials, Inc.
CMUTCD	California Manual on Uniform Traffic Control Devices for Streets and Highways
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
COG	Council of Governments
CPUC	California Public Utilities Commission
CSC	California Species of Special Concern
CUP	Conditional Use Permit
CUPA	Certified Unified Permitting Agencies
CVFPB	Central Valley Flood Protection Board
CWA	Clean Water Act
dBA	Decibels, A-weighted
DBCP	Dibromochloropropane (pesticide)
DEIR	Draft Environmental Impact Report
DFG	Department of Fish & Game
DMG	Division of Mines and Geology
DOC	California Department of Conservation
DOF	California Department of Finance
DOT	Department of Transportation
DPM	Diesel particulate matter
DPR	California Department of Parks and Recreation
DSCM	Dry Standard Cubic Meter
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EDB	Ethylene Dibromide (gasoline additive)
EIR	Environmental Impact Report
EMF's	Electromagnetic Fields
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FACE	Financial Assurance Cost Estimate
FAR	Federal Aviation Regulation
FC	Federal Candidate
FCAA	Federal Clean Air Act

FCGP	Fresno County General Plan
FCEHD	Fresno County Environmental Health Division
FCOG	Fresno Council of Governments
FE	Federally Endangered (Species)
FEMA	Federal Emergency Management Agency
FGC	Fish & Game Code
FHWA	Federal Highway Administration
FICON	Federal Interagency Commission of Noise
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FOB	Freight on Board
FPE	Federally Proposed Endangered (Species)
FPPA	Farmland Protection Policy Act
FPT	Federally Proposed Threatened (Species)
FSZ	Farmland Security Zone
FT	Federally Threatened (Species)
FTA	Federal Transit Administration
FWS	Fish & Wildlife Service
GAMA	Groundwater Ambient Monitoring and Assessment
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gas
GIS	Geographical Information System
GLC	Ground Level Concentration
GPM	Gallons per Minute
Gr	Grain
GVWR	Gross Vehicle Weight Rating
GWP	Global Warming Potential
HAP	Hazardous Air Pollutants
HARP	Hot Spots Analysis and Reporting Program
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HFC	Hydrofluorocarbon
HHDT	Heavy-Heavy Duty Trucks
HI	Hazard Index
HMA	Hot Mix Asphalt
Hp	Horse Power
HRA	Health Risk Assessment
HS	Health & Safety
HSC	California Health & Safety Code
HSWA	Hazardous and Solid Waste Amendments
HWCL	Hazardous Waste Control Law
Hz	Hertz
ICBO	International Conference of Building Officials
IDA	International Dark-Sky Association

IS	Initial Study
ITP	Incidental Take Permit
KBWA	Kings Basin Water Authority
KRCD	Kings River Conservation District
KRRP	Kings River Regional Plan
KRWA	Kings River Water Authority
KRWD	Kings River Water District
kW	Kilowatt
LA	Limited Agriculture
LBP	Lead-Based Paint
LCC	Land Capability Classification
LCFS	Low Carbon Fuel Standard
LDA	Light Duty Automobile
LESA	California Agricultural Land Evaluation and Site Assessment
LOS	Level of Service
LRA	Local Responsibility Area
LU	Land Use
MACT	Maximum Achievable Control Technology
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Levels
MEI	Maximally Exposed Individual
MHDT	Medium-Heavy Duty Trucks
MM	Mitigation Measure
MMTons	Million Tons
MMTCOe	Million Metric Ton Carbon Dioxide Equivalent
MT	Metric Ton
MMBtu/hr	Million British Thermal Units per Hour
MMtpy	Million Tons per Year
MPG	Mile per Gallons
MPO	Metropolitan Planning Organizations
MRZ	Mineral Resource Zone
MSHA	Mine Safety and Health Administration
N ₂ O	Nitrous Oxide
NAAQS	Nonattainment Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCDC	National Climate Data Center
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NGO	Non-governmental Organization
NHTSA	National Highway Traffic Safety Administration
NMFSC	National Marine Fisheries Service Species of Concern
NMHC	Non-methane hydrocarbons
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NOA	Naturally Occurring Asbestos
NOD	Notice of Decision

NOI	Notice of Intent
NOP	Notice of Preparation
NOx	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Services
NSR	New Source Review
O ₃	Ozone (Smog)
OEHHA	California EPA Office of Environmental Health Hazard Assessment
OES	California Office of Emergency Services
OLM	Ozone Limiting Method
OMR	Office of Mine Reclamation
ONAC	Federal Office of Noise Abatement and Control
ONC	Department of Health Services Office of Noise Control
OPR	Governor's Office of Planning & Research
OS	Open Space
OSHA	Occupational Safety and Health Act
P-C	Production-Consumption
PCB	Polychlorinated Biphenyl
PCC	Portland Cement Concrete
PCE	Passenger Car Equivalency
PF	Public Facilities
PFC	Perfluorocarbon
PG&E	Pacific Gas & Electric
PGA	Peak Ground Acceleration
PM	Particulate Matter
PMI	Point of Maximum Impact
PPB	Parts per Billion
PPM	Parts per Million
PPV	Peak Particle Velocity
RAP	Recycled Asphalt Product
RCRA	Resource Conservation and Recovery Act
REL	Reference Exposure Level
RES	Renewable Electricity Standards
RFS	Renewable Fuel Standards
RMC	Ready-mix Concrete
ROG	Reactive Organic Gases
RPS	Renewal Portfolio Standard
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SC	State Candidate (Species)
SCM	Supplemental Cementitious Materials
SE	State Endangered (Species)
SEL	Sound Exposure Level
SF ₆	Sulfur Hexafluoride
SFP	State Fully Protected (Species)

SIL	Significant Impact Level
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLAMS	State and Local Monitoring Stations
SMARA	Surface Mining Control & Reclamation Act
SMGB	State Mining and Geology Board
SMRP	Surface Mining and Reclamation Plan
SO ₂	Sulfur Dioxide
SPCC	Spill Prevention, Control and Countermeasure Plan
SSJVIC	Southern San Joaquin Valley Information Center
ST	State Threatened (Species)
SVOC	Semi-Volatile Organic Compounds
SWHA TAC	Swainson's Hawk Technical Advisory Committee
SWL	State Watch List (Species)
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TBACT	Toxic Best Available Control Technology
TCP	Trichloropropane (solvent)
TI	Traffic Index
TNM	Traffic Noise Model
TOC	Total Organic Compounds
tpy	Tons per Year
TR	Transportation
TVP	True Vapor Pressure
UBC	Uniform Building Code
UMTA	Urban Mass Transit Administration
USACE	US Army Corp of Engineers
USEPA	US Environmental Protection Agency
USFWS	US Fish & Wildlife Service
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
VDE	Visible Dust Emissions
VELB	Valley Elderberry Longhorn Beetle
VIA	Visual Impact Assessment
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
VPD	Vehicles Per Day
VRM	Visual Resource Management
VRPA	VRPA Technologies, Inc.
WDR	Waste Discharge Requirements
WSA	Water Supply Assessment